

Gerard O'Grady

A Grammar of Spoken English Discourse

The Intonation of Increments

Continuum Studies in Theoretical Linguistics



A Grammar of Spoken English Discourse

Continuum Studies in Theoretical Linguistics

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Transcription Symbols

Intonation

/	Rising tone
\	Falling tone
∨	Falling-Rising tone
∧	Rising-Falling tone
–	Level tone
↑WORD	High-Key
↓WORD	Low-Key
↑ <u>WORD</u>	High-Termination
↓ <u>WORD</u>	Low-Termination
<u>WORD</u>	Tonic word: word containing major tone movement in tone unit
//	Tone unit boundary
...	Incomplete Tone Unit

When discussing Brazil's work the following alternate intonation conventions are used:

p	proclaiming/falling tone
p+	proclaiming/falling-rising tone dominant
r	referring/falling-rising tone
r+	referring/rising tone dominant
o	o/level tone

Grammar

N	Nominal element
V	Verbal element
V'	Non-finite verbal element
A	Adverbial element
E	Adjectival element

W	Open selector
CON	Convention
P	Preposition
PHR	Phrase: series of elements treated as a single lexical selection
NUM	Numeral
VOC	Vocative
d	Determiner
d°	Determiner with zero realisation
c	Conjunction
Ø	Element or elements which are unrealized
ex	Exclamation
n	Suspensive nominal element
v	Suspensive verbal element
v'	Suspensive non-finite verbal element
a	Suspensive adverbial element
e	Suspensive adjectival element
w	Suspensive open selector
con	Suspensive convention
p	Suspensive preposition
phr	Suspensive phrase
num	Suspensive numeral
voc	Suspensive vocative
+	Reduplication
#	End of increment
(N)	Bracketed element(s): element(s) did not lead to the realization of a new intermediate state
...	Abandoned increment

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Part I

Setting the Scene

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Chapter 1

Introduction: The Organization of Spoken Discourse

In 1995, David Brazil published *A Grammar of Speech* which he described as an exploratory grammar and claimed that:

An exploratory grammar is useful if one is seeking possible explanations of some of the many still unaccounted for observations one may make about the way the language works. It accepts uncertainty as a fact of the linguist's life. Its starting-point can be captured in the phrase 'Let's assume that . . . ' and it proceeds in the awareness that any assumptions it makes are based on nothing more than assumptions; the aim is to test these assumptions against observable facts. (1995: 1)

Due to Brazil's untimely death, he was unable to continue his exploration past the point reached in Brazil (1995) namely the testing of his grammar against a small monologic corpus: a retelling of a short urban myth to a listener who had not previously heard the story by a speaker who had him/herself only heard the story shortly before it was retold.¹ This book sets out to update the exploration in two ways. The first, an 'inward' exploration, critically examines the premises on which Brazil's grammar rests and attempts to link these assumptions to the wider literature. The second, an 'outward' exploration, tests the grammar against different data, and seeks possible explanations for a range of attested linguistic behaviour not accounted for by Brazil. Unlike Brazil (1995) this book explicitly considers the role of intonation in helping to segment a stretch of speech into meaningful utterances and in projecting the unity of the segmented unit of speech.

Conversation Analysts e.g. Sacks (1995) and Schegloff (2007), like Brazil recognize that there is a structure and design in spoken discourse. Their famous 'no gap no overlap' model of conversation, centred on the smooth transition of turn-taking, is premised upon the belief that cooperative

interlocutors are so tuned into the discourse that they can effortlessly produce a seamless flow of smooth, pause-free conversation. The studies presented in Couper-Kuhlen and Selting (1996) illustrate clearly how interlocutors utilize intonation and rhythm to manage their conversational contributions by signalling their intention to either maintain or relinquish the floor resulting in a smooth flow of conversational discourse. Yet, by focusing exclusively on turns and potential turns much of the structure and design of spoken discourse is overlooked. This book building on Brazil (1995) aims to describe how speakers design and structure their discourse to suit their own individual conversational needs and not just how they manage the conversational floor.

Since the publication of Brazil (1995) two very influential phonological theories have emerged: Optimality Theory (Prince and Smolensky 2004), and the Tone and Break Index (ToBI) description of intonation based on the autosegmental-metrical model of intonation developed by Pierrehumbert (1980). Much work in Optimality Theory (OT) has focused on tonality and OT theorists have shown how language specific morpho-syntactic structure and information focus interact with universal constraints to create language specific tonality divisions (Gussenhoven 2004: chapter 8). Yet, OT as a theory with generative underpinnings has not involved itself with real language data and is therefore incapable of describing the structure and design of an utterance produced to satisfy a specific communicative need.

Beckman, Hirschberg and Shattuck-Hufnagel (2005) is a revealing account of the motivations which lead to the development of the ToBI transcription system. They remind us that ToBI emerged from a series of interdisciplinary workshops which aimed to create a standard set of conventions for annotating spoken corpora. The standardization of conventions was required for a broad set of uses in the speech sciences such as the development of better automatic speech recognition systems and the creation of speech generation systems (*ibid.* 10–12). While ToBI is a phonological theory and notates meaningful intonational differences it does not annotate any unit of speech larger than the Intonational Phrase or tone unit. This is undoubtedly because the tone unit is the largest stretch of speech which can be unambiguously defined by phonology alone.² Scholars working within the ToBI framework have not concerned themselves with the self-evident fact that humans produce speech in order to achieve a purpose and as a result have not attempted to find regularity in the interaction between the phonology, the grammar and the semantics. Consequently ToBI, like OT descriptions of speech, focuses on the form of utterances rather than on their function and ignores many of the means

speakers employ to structure their utterances in the pursuit of their individual communicative purposes. Brazil's grammar is capable of describing the organization of discourse precisely because it looks for regularity in how the lexicogrammar, the phonology and the context combine to create and structure meaning.

Brazil's grammar rests on four premises, which will be examined and situated within the literature. The four premises are (1) speech is purposeful, (2) speech is interactive, (3) speech is cooperative, and (4) the communicative value of a lexical item is negotiated as the discourse unfolds. For the moment, I will presume that Brazil's premises are well-founded and will instead turn my attention to describing his claim that what he dubs *used language* can be described as a sequence of word-like elements which move from an *initial state* to a *target state*. Brazil (ibid. 48) defines initial state as speakers' perceptions, prior to performing the utterance, of what needs to be told either by themselves to their hearers or by their hearers to themselves, while target state is defined as the modified set of circumstances which have arisen after the telling. The stretch of speech which completes the telling, by moving from initial to target state, is the *increment*. Chapter 1 details the two criteria – one grammatical, the other intonational – which Brazil employed to identify increments. Without, at this point, getting bogged down in the details of how to identify an increment, it is sufficient to propose that an increment is a unit which tells something relevant to the speakers' or the hearers' present informational needs.

The following paragraphs continue the inward exploration of the grammar by sketching a possible model of language processing and arguing that if the model and the assumptions upon which it rests are correct, increments are vital intermediate processing units which bridge the tone/information unit and the achievement of a speaker's ultimate communicative intention. Without speaker/hearer recognition of the achievement of a target state, speakers would be less able to achieve their ultimate communicative intentions.

Increments which consist of a chain of word-like elements simultaneously consist of a chain of tone units. The data studied here consists of eleven readers reproducing two short political monologues unimaginatively labelled as Text 1 and Text 2 – see Chapter 5 for a full description of the corpus. In Text 1, the smallest number of complete tone units found in an increment was 1, the largest 14, and the mean 3.96. The smallest number of complete tone units found in an increment in Text 2 was 1, the largest 10 with a mean of 2.76.³ Thus, in the corpus studied here an increment was a unit of speech which completed a telling and was on average between 3 and 4

tone units long. Before proceeding with the outward exploration of the grammar it is first necessary to demonstrate that a grammar grounded in increments and not in clauses⁴ is a useful way of segmenting and describing the speech signal. The decision to segment the continuous speech signal into discrete units reflects an ideological stance and necessarily imposes a non-neutral perspective on how an act of communication is viewed. To illustrate, adoption of the clause as the unit which primarily generates meaning in a hierarchical grammar such as that proposed by Halliday and Matthiessen (2004) results in a view of language as a series of Matryoshka dolls with smaller units nesting inside larger ones. The usefulness and power of such an approach has been repeatedly demonstrated and this raises the question of why anyone would wish to look at language from a different perspective. This book attempts to demonstrate that looking at language as a process or discourse, and not as a product or text aids the overall explication of the meaning potential of the language.

If speech is viewed as a series of increments it must also be seen as a concatenation of tone units. Halliday and Matthiessen (2004: 88) argue that every tone unit⁵ realizes a quantum or unit of information in the discourse and that 'spoken English unfolds as a sequence of information units, typically one following after another in unbroken succession'. Chafe (1994: 66) similarly argues that every intonation unit realizes a single new idea and that speakers build up their discourse idea by idea or, in other words, intonation unit by intonation unit. As a preliminary statement it can be postulated that speakers move from initial to target state by producing a sequence of tone units.

Such a preliminary statement raises two questions: is there evidence in the literature for the unitary nature of the tone unit as a unit of language processing, and even if tone units are units of language processing, is it feasible that an act of telling could be produced tone unit by tone unit? The next paragraph evaluates evidence which supports the view that the tone unit represents a pre-assembled information unit⁶ which is inserted into the discourse as a single unit.

As seen above, linguists such as Halliday and Chafe argue that tone units realize a single quantum of information. Laver (1970: 68) offers psycholinguistic support by arguing that the tone unit is a pre-assembled stretch of speech, while Boomer and Laver (1968: 8) claim that evidence from speech errors provides good evidence in support of the view that tone units are handled as a unitary behavioural act by the central nervous system. If this view is correct,⁷ then the increment can usefully be described as

a string of information units which move the discourse from an initial to a target state.

The second question is whether it is psychologically realistic to describe an act of telling as a concatenation of tone units which form increments. The work of Levelt (1989) suggests a possible mechanism which may allow us to realistically describe the satisfaction of a communicative intention as a concatenation of one or more tone units which achieve target state. He argues (*ibid.* 109) that, in order to satisfy their communicative needs, speakers 'microplan' and 'macroplan' the content of their utterances. He defines microplanning as the assigning of information structure within the discourse,⁸ and macroplanning as the sum total of all the activities which speakers use to satisfy their individual communicative intentions; speakers macroplan in order to achieve target state and realize their communicative intentions. Thus, it seems feasible to argue that, prior to speaking, speakers set a target which they realize by producing a chain of tone units which form an increment. Calvin (1998: 120) reminds us that working memory is rather limited and that the average person can only hold onto a maximum of nine separate chunks of information at any one time. Thus, if increments are formed out of preassembled chunks we would not expect to find increments of larger than 9 tone units. In the data studied, the mean size of an increment was 3.96 and 2.76 tone units in texts 1 and 2 respectively, well within the capacity of working memory.

Levelt's definition of macroplanning is wider than the planning of an increment. It is easy to imagine communicative intentions, such as the desire of a politician to convince an audience to vote them into power, which could hardly be satisfied by the production of a single increment. Speakers who need to produce more than one increment⁹ to satisfy their communicative intentions, are clearly able to do so without any apparent difficulties caused by the attested limitation in the storage capacity of working memory. Levelt (*ibid.* 109) recognizes that the 'journey from message to intention' often requires more than one step or, in the terminology used here, increment. Accordingly, he argues that speakers realize their goals by producing a series of sub-goals. At the same time, he acknowledges that a major task of a speaker, while constructing a message, is to keep track of what is happening in the discourse. It is proposed here that the increment, by realizing a target state, enables the speaker to successfully achieve a sub-goal and move a step closer to the achievement of the overall communicative goal. Increments produce a target state which is simultaneously the initial state of the immediately following increment

and this concurrent target/initial state allows the speaker to dump the previous increment from working memory in order to make space for the following one without losing track of what has gone before. Thus, it seems that increments may function to: (1) satisfy the speaker's communicative intention; or (2) produce a target/initial state which allows speakers to progress towards the satisfaction of their communicative intentions while keeping track of what is happening in the discourse.

To summarize the preceding paragraphs, an information unit realized phonologically as a tone unit is a preassembled chunk which joins with other tone units to form an increment. A telling increment may satisfy the speaker's communicative intention but if it does not, it results in the creation of a new initial state which speakers use as a springboard to realize their ultimate telling, i.e. the modification in the existing state of speaker/hearer understanding required to achieve their purpose and generate – if appropriate – the desired perlocutionary response.

Much recent linguistic theory, e.g. Sinclair (1991: 110), Wray (2002: 18), persuasively argues that language is, at least partly, formed out of chunks larger than orthographic words and so the outward exploration of the grammar must attempt to encode increments, where possible, as chains comprised not only of orthographic words but also of what we informally label here as chunks. Brazil coded his chains as strings of verbal, nominal, adverbial and adjectival orthographic words but did so with the express proviso that such labelling is no more than 'a temporary expedient' (1995: 43). Similarly, we code the lexical elements which occur in increments in traditional terms but keep an open mind as to whether it may become necessary to abandon traditional classification in order to provide a psychologically more realistic coding of how humans assemble speech. It is clearly true that the categorization of language into nouns and verbs is descriptively useful. Even a scholar such as Elman (1990), who argues against the existence of mental concepts such as nouns and verbs, found it necessary to describe his findings in terms of nouns and verbs. For the moment, there appears to be no other way to describe accurately a concatenation of lexical elements other than by using the traditional codings.¹⁰ Yet it also appears sensible not to attempt to decompose each and every functional lexical element, e.g. idioms, into strings of orthographic words (Thibault 1996: 257–8).

The remainder of the book comprises seven further chapters: the following three are theoretical and represent the inward exploration of the grammar. Chapter 2 describes the formal mechanism of Brazil's grammar of speech and suggests ways in which the grammar can be expanded.

In Chapter 3 we examine the theoretical underpinnings on which Brazil's grammar rests. Some difficulties, chiefly with Brazil's view of *shared knowledge* and how this is projected by tone selections, are highlighted and revisions are offered. Chapter 4 explores the feasibility of encoding speech in a linear grammar and critically examines how to notate lexical elements in the grammar. Chapters 5 to 7 represent the outward exploration of the grammar. Chapter 5 describes the corpus used to test the grammar and details the notation system employed. Chapters 6 and 7 test the grammar against the corpus. The arguments presented in the book are concluded in Chapter 8 which also sets out further areas where the grammar needs to be developed.

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Part II

The Outward Exploration of the Grammar

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Chapter 2

A Review of *A Grammar of Speech*

This chapter, drawing from Brazil's exploratory article *Intonation and the grammar of speech* (1987) and his book *A Grammar of Speech* (1995), summarizes his theory of a linear grammar of spoken English. It will be seen that Brazil's grammar rests upon four premises. In this chapter, only Brazil's first premise is described in detail because the remaining three premises are best described and evaluated after a review of the wider literature which is presented in Chapter 3. Once the theory has been described omissions which are explicitly mentioned by Brazil as worthy of future exploration but not yet incorporated in the grammar, are considered in order to generate proposals suggesting how the grammatical description of speech might be expanded. It is hoped that the incorporation of these omissions will allow the grammar to further describe how speakers employ their grammatical resources to satisfy their communicative needs.

2.1 Starting Premises¹

The grammar proposed by Brazil aims to describe the observable fact that, in real time communication, speech unfolds word by word. He does not attempt to describe how language is generated or processed in the mind. Brazil (1987: 146–8) postulates five premises on which he bases his theory. However, in line with Brazil (ibid. 26–36) I have combined premises 4 – *talk takes place in real time* – and 5 – *speakers exploit the here and now values of the linguistic choices they make* – into one premise – *existential values*.

The first premise is that *speakers speak in pursuit of a purpose*; they are not concerned with whether or not their utterances obey de-contextualized abstract syntactic rules but rather with whether or not their speech is able to contribute to the successful management of their affairs. Linguistic competence consists of the ability to engage in the communicative events

with which speakers are faced from time to time (p. 9).² Brazil labels such communicatively engaged language as *used language* and defines it as:

language which has occurred under circumstances in which the speaker was known to be doing something more than demonstrate the way the system works. (p. 24)

Used language, according to Brazil, can be analysed in terms of abstract syntactic constraints, but he claims that such an analysis is an additional fact which arises from the post-hoc examination of an utterance no longer serving any communicative purpose. Such an analysis, he argues, is an acquired skill not required by speakers engaged in successful communication. A grammar which aims to describe the observed workings of speech need not, he claims, concern itself with explicating the inherent possibilities of the language system (p. 16). Traditional approaches to grammar have focused on the workings of formal decontextualized abstract sentences and have assigned the study of how speakers employ sentences to satisfy their communicative needs to the discipline of pragmatics. Competence, according to these traditional views, is independent of and prior to use. Brazil's grammar, unlike traditional grammars, does not draw a distinction between form and use. An utterance, according to Brazil, is ill-formed if it is incapable of satisfying the speaker's communicative needs, regardless of whether or not it breaches formal rules.

A grammar which does not distinguish between form and function is uninterested in any formal classification of sentences into formal categories, i.e. imperative, interrogative, and declarative. Instead it classifies language functionally. Brazil proposed that while there are numerous ways of describing the purpose of any particular utterance, speakers realize their individual communicative purposes either by telling or asking (pp. 27–8). For example, a speaker can warn a hearer planning to go hiking by producing an indicative clause: *Bears have been seen at the bottom of the mountains* or *Watch out for the bears* or an interrogative clause *Have you heard the reports of the bears at the bottom of the mountains?* Brazil's claim is that the mechanisms employed by speakers can be divided into *telling* and *asking exchanges* which speakers employ to fulfil their communicative purposes. Such exchanges are defined as follows:

Telling exchanges: Tellers simultaneously initiate and achieve their purpose; the hearer may (or may not) then acknowledge the achievement.

Asking exchanges: Askers initiate, but their purpose is not achieved until hearers make an appropriate contribution; initiators may then acknowledge (or not acknowledge) the achievement. (p. 41)

According to Brazil, there is no formal grammatical or intonational distinction between telling and asking exchanges. The difference lies in the division of knowledge assumed by speakers to exist between themselves and their hearers. He states (p. 250) that the sequence of word-like elements required to satisfy a communicative need in a telling exchange is a *telling increment*. In an asking exchange, the communicative need is only achieved after the intervention of another participant, i.e. the sequence of elements produced cooperatively by the speaker and the hearer which meets the speaker's communicative need is an *asking increment* (p. 250).

Brazil's second premise is that speech is *interactive*. By interactive Brazil means that speakers always pursue their purposes with respect to second parties. He claims that all forms of discourse are jointly constructed by speakers and hearers. Even monologists are engaged in interactive communication in that they frame their messages with respect to their projection of their hearers' perspectives.

The third premise is that speakers and hearers assume *sensible and co-operative behaviour* from their interlocutors. Hearers, for the most part, can assume that speakers will neither deliberately mislead them nor stop short and fail to complete their messages. Once a telling increment has begun an expectation is created that the speaker will continue until something relevant to the hearer's communicative needs has been told. Each word-like element, uttered prior to the achievement of the intended telling, alters the expectation of what remains to be told.³

The fourth premise is that speakers' words must be interpreted on the basis of the *existential value* they have for both parties in relation to the immediate and unique context they occur in. For example, Brazil (pp. 34 and 35) argues the use of the word *friend* in an actual communicative situation may signify a lexical choice which realizes the communicative value of any of the following: *not my enemy*, *not my brother*, *not my partner*, *not an acquaintance*, etc. He claims that:

We shall take it that it is this temporary, here-and-now opposition that provides the word with the value that the speaker intends and that the listener understands. (p. 35)

In accordance with the above premises, Brazil proposed that speech is best understood as a *happening* or *process* and not as a *product*. Most forms of written language are presented as complete texts.⁴ Writers have numerous opportunities to revise their work which masks the physical process of their writing one word after another. Similarly readers are at liberty to re-read. Spoken language, on the other hand, is usually presented as a flow of words in real time which hearers interpret on a piecemeal basis without the opportunity of hearing more than once. Halliday (1994: xxii–xxiii) states that ‘writing exists whereas speech happens’ and Brazil’s claim is that the process of speech is usefully described by a linear grammar.

2.2 How Brazil Identified Increments

An act of telling, Brazil claims, is ultimately dependent on whether or not the speaker has satisfied a communicative need. He provides the following examples (1987: 148):

- (1) Speaker A: *I saw John in town.* #⁵
 Speaker B: *Oh.*

and remarks that B is evidently satisfied that A has told something relevant to the present informational needs. However, in another situation the same sequence of elements may not in itself meet the present informational needs, e.g.

- (2) Speaker A: *I saw John in town. He is going back to the States.* #
 Speaker B: *Oh.*

He states that: ‘the fact of seeing John is not itself newsworthy’. In order to satisfy the present informational needs speaker A is obliged to carry on speaking until speaker B’s communicative needs have been satisfied. Brazil’s claim is that identification of increments is only possible in context. However, for a sequence of elements to be identifiable as *potential* increments they must also fulfil two necessary but not sufficient criteria: one intonational; the other syntactic.

2.2.1 Intonational criterion

Brazil (1997) sets out Brazil’s theory of discourse intonation where he argues that the speakers engaged in a communicative event select either

end-falling tones or end-rising tones depending on their understanding of the state of shared speaker-hearer convergence. If a speaker introduces content into the discourse which he/she believes to be outside the existing state of shared speaker-hearer convergence, he/she selects end-falling tone. On the other hand, if the speaker believes that the content introduced into the discourse is already part of the shared state of speaker-hearer state of convergence, he/she selects end-rising tone. Brazil labelled end-falling tone, which is realized as a fall or rarely as rise-fall, proclaiming (P) tone and end-rising tone, which is realized as either a fall-rise or rise, as referring (R) tone. Brazil (1987: 150) states that for an increment to have the potential to tell it must contain at least one proclaiming tone unit (p. 254). Examples (3) to (5) all tell and are potential telling increments.

- (3) // P i SAW JOHN in town //
- (4) // P i SAW JOHN // R in TOWN //
- (5) // R i SAW JOHN // P in TOWN //

He states that referring tone labels the tone unit as not intended to change the existing informational status quo (1987: 149), and so examples (6) and (7) cannot tell.

- (6) // R i SAW JOHN in town //
- (7) // R i SAW JOHN // in town //
- (8) // R i SAW JOHN // IN town . . .

Example (8) is a referring tone unit followed by an incomplete tone unit which Brazil (1997: 148) describes as a manifestation of the speaker's moment to moment difficulties in employing his/her linguistic resources. Incomplete tone units, by definition, are in themselves incapable of telling; therefore examples (6) to (8) are not potential telling increments.

Example (9), as Brazil (1987: 151) concedes, complicates the description slightly.

- (9) // P i SAW JOHN // P in TOWN // #

The first proclaiming tone unit, while altering the hearer's world view, does not, in the speaker's view, tell the hearer all that needs to be told. The fact of *seeing John*, while significant, does not in the context of interaction satisfy the hearer's communicative need, which is to be told both who was seen and where the person was seen. The speaker is obliged to produce the

second proclaiming tone unit in order to satisfy the present communicative need. The two tone units coalesce into a single increment which completes an act of telling and realizes a potential telling increment.⁶

2.2.2 Syntactic criterion: grammatical chains

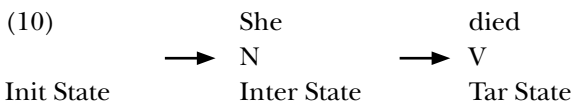
The second necessary but not sufficient criterion which a sequence of elements must fulfil in order to be identified as a potential increment is syntactic. The sequence of elements must comprise a successful run through of a *grammatical chain*. In order to explicate the workings of a grammatical chain Brazil creates a special subclass of chains which he labels *simple*. Simple chains are incapable of describing the reality of most used speech, but are introduced here as an expository device to illustrate the workings of the chains.

Prior to the saying of the first element of a chain the interlocutors are in an *initial state*. After the saying of the first element which, according to Brazil, mutatis mutandis must be a nominal element (*N element*), the speaker and hearer have moved to an *intermediate state*. After the saying of the second element which, he says, must be a verbal element (*V element*) the speaker and hearer have moved either to *target state* or to a further intermediate state (p. 47). Brazil (p. 48) defines the terms initial and target state as follows:

‘Initial State’ refers to the special set of communicative circumstances which the speaker assumes he or she is operating in before the chain begins: it embraces among other things the speaker’s perception of what, at the present moment, the hearer needs to be told.

‘Target State’ refers to the modified set of circumstances that comes about as a result of the listener being told what needs to be told. The whole process of telling is therefore visualized as a change from Initial State to Target State.

Some examples taken from Brazil (1995) demonstrate the workings of the chains.⁷ The minimum chain consists of two elements an N and a V element:



The N element *she* alters the initial state and sets up an intermediate state which anticipates a V element, production of which results in the achievement of target state. If target state is not achieved after the completion of the minimum chain, the speaker is obliged to produce further elements. For example, in (11) *saw* fails to complete the chain and so the speaker is obliged to produce the N element *this figure* which achieves target state. In example (12), however, the second N element *her* does not achieve target state, and so the speaker is obliged to produce a following adverbial element (*A element*). A similar explanation holds for example (13); as neither the V element nor the subsequent N element results in the achievement of target state, the speaker is obliged to produce the following adjectival element (*E element*).

Example (14) is slightly more complicated in that the E element *suspicious* has the potential to attain target state, i.e. it realizes a completion but not a finishing. However, in the context in which it was uttered, Brazil claims, that in the speaker's opinion it did not fulfil the present communicative needs: in order to achieve target state the speaker was obliged to produce a following A element.

(11)	She	saw	this figure
	→ N	→ V	→ N
Init State	Inter State 1	Inter State 2	Tar State

(12)	She	piles	her	into the car
	→ N	→ V	→ N	→ A
Init State	Inter State 1	Inter State 2	Inter state 3	Tar State

(13)	It	made	her	nervous
	→ N	→ V	→ N	→ E
Init State	Inter State 1	Inter State 2	Inter State 3	Tar State

(14)	This	made	my friend	suspicious	at once
	→ N	→ V	→ N	→ E	→ A
Init State	Inter State 1	Inter state 2	Inter State 3	Inter State 4	Tar State

All instances of simple chains must follow one of the paths set out in Figure 2.1 in order to potentially reach target state. Any simple chain which realizes a successful run through of the chaining rules is potentially an increment. A simple chain which does not follow a successful run through of one of the potential chain routes cannot be an increment.

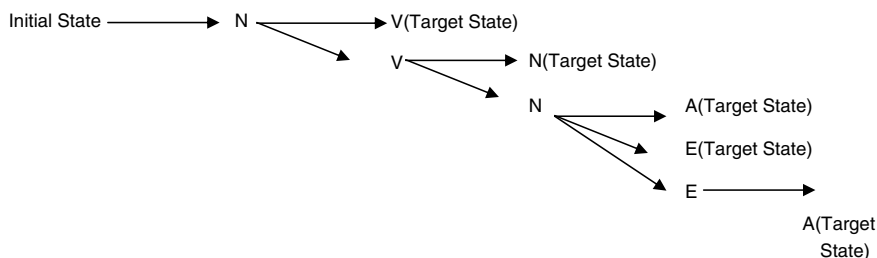


FIGURE 2.1 Adapted from Brazil (1995: 51)

2.2.3 Suspensions and extensions

Brazil recognized that the chaining rules mapped out in Figure 2.1 are incapable of explaining a vast amount of naturally occurring speech. Accordingly, he introduced two formal devices, *suspensions* and *extensions*, which allow the grammar to explain used language which does not comply with the simple chaining rules.

2.2.3.1 *Suspensions*

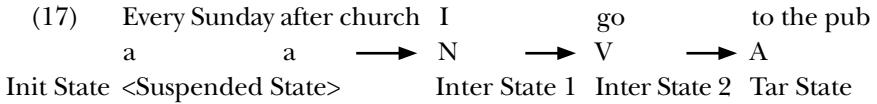
It is obvious that not every utterance of used speech necessarily commences with an N element, e.g.

- (15) I go to the pub every Sunday after church.
 (16) Every Sunday after church I go to the pub.

Only (15) conforms to the order of Brazil's simple chaining rules. In (16), only after two A elements does the speaker produce the obligatory N element. Brazil (pp. 62–7) labels such cases *suspensions* and states (p. 64) that the distinguishing features of suspensions are that:

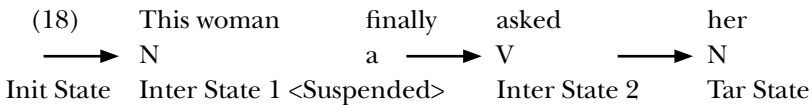
- 1 After any inserted element(s), the State reverts to that which existed immediately before it (them), so subsequent procedures are then fully specified by the rules, as if there had been no interruption.
- 2 The operation of the rules depends upon the end-point of the suspending insertion being determinable: it is necessary for users to know at what point they get back to fulfilling previously-entered-into commitments.

Turning first to point 1, Brazil argues that in example (17) the two *a* elements⁸ fail to result in the creation of an intermediate state. The first intermediate state is realized only by the production of the N element *I*.



The *a* elements *every Sunday after church* suspend but do not discharge the speaker's obligation to produce the expected N element.

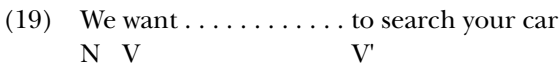
Point 2 only applies where the suspensive element interrupts a chain. Example (18) from Brazil (p. 63) demonstrates:



The N element anticipates a following V element. The interrupting suspensive *a* element *finally* does not relieve the speaker from this commitment and so the speaker is obliged to resume the chain from the point immediately prior to the suspensive element and produce a V element.

2.2.3.2 Extensions

Brazil recognized that on occasions speakers may have exhausted all the possibilities that progress along one of the routes made available by the simple chaining rules allows, without achieving target state (p. 57). He provides the example:



Completion of the minimal NV chain fails to achieve target state. To attain target state the speaker must follow a longer route; in this case, one *extended* by the production of a V' (non-finite verbal element). Production of a V' element may result in the achievement of a target state as example (20) demonstrates.



However, if production of the V' element fails to result in the achievement of target state Brazil maintains (p. 59) that the intermediate state after a V' element is the same as that which would have been precipitated by the production of a V element. Some examples from his corpus clarify. The same state is reached in the chain after the V' elements *to search* and *leaving* in (21) and (23) as it is after the V elements *searched* and *left* in (22) and (24) respectively. To achieve target state the speaker must produce the following N or A element.

- (21) We want to search your car
 N V V' N

- (22) They searched her car
 N V N

- (23) She drove off leaving the man on the pavement
 N V V' N A

- (24) She left the man on the pavement
 N V N A

In Brazil's words:

It is this ability to trigger a doubling back in what we are representing as a left-to-right progression, so as to start a second run through a specified part of the rule system, that distinguishes V' from other kinds of element. (p. 59)

Production of the extended subchain may lead to the achievement of target state as in (21) and (23) above. If it fails to reach target state, the speaker is obliged to produce one or more following subchains until target state has been achieved, e.g. (25).

- (25) She had to wait hoping to get some help
 N V V' V' V' N

2.2.3.3 *Summary*

Brazil introduced two types of subchains: suspensions and extensions. A suspension does not result in the creation of an intermediate or target state.

Upon completion of the suspension the speaker proceeds from the point reached in the chain prior to the suspensive element(s). Extensions have the potential to achieve target state. The intermediate state after an extension is identical to that which would have been precipitated had the V' been a V in a simple chain. Production of the first element of an extension commits the speaker to a second run through of the chaining rules. If an extension fails to achieve target state, speakers are obliged to produce further extensions until target state has been achieved.

2.2.4 The coding of lexical elements in chains

Brazil claims that a grammar which aims to describe the reality of observed used language, does not need to include higher level constituents such as nominal groups, verbal groups, etc. Instead, he argues that higher-level constituents are products of constituency analyses which are useful in the post-hoc analysis of complete texts but not in the descriptive analysis of speech as a happening. He argues that what he calls 'the facts of piecemeal encoding and decoding' of speech are not to be denied (1987: 147). He says:

It is important to stress that the real-time presentation of speech we make central to our account of grammar is an observable and incontrovertible fact, not a theory. People just do utter one element and then follow it with another. (p. 229)

The expository examples presented to this point, which have described speech in terms of N, V, V', A and E elements, are in Brazil's full description broken down into smaller elements. The following examples illustrate the full descriptive notation.

	Simplified expository description	Full description
(26)	(The little red book) (.....N.....)	The little red book d e e N

The N element *the little red book* is decomposed into a string of words commencing with a *determiner* (d) followed by two e elements, *little* and *red*, and ends with the N element *book*. All elements before the final N are notated in lowercase, analogous to suspensions, because once speakers produce d or e elements they must produce a following N element. In (27)

the indefinite article does not have a plural form and is represented in the chain by *zero realization* and notated by the convention *d°*.

- (27) a little red book little red books
- d e e N d° e e N

Little needs to be added to the description presented earlier of verbal elements as strings of word-like elements. The examples are from Brazil (p. 101).

Simplified expository description	Full description
(28) (have searched) (.... V)	have searched V V'
(29) (was waiting) (... V)	was waiting V V'
(30) (had been expecting) (..... V)	had been expecting V V' V'

Examples (28) to (30) demonstrate that Brazil decomposes V elements into strings of elements commencing with a V and then followed by one or more extensive V' elements.

To date, a number of quite disparate elements have been classified as A elements.

Simplified expository description	Full description
(31) carefully A	carefully A
(32) on the pavement A	on the pavement p d N
(33) when A	when W ⁹

Examples (31) to (33) show that the full description treats A elements in three ways as:

1. adverbials in (31).
2. prepositions followed by an optional determiner and adjectival elements, with an obligatory nominal element in (32).¹⁰

3. *open selectors* in (33). Brazil (p. 251) states that open selectors consist of a number of elements which are classified 'in various ways' by a sentence grammar. He provides examples of open selectors such as *who*, *when* and *because*, and argues that what unites these disparate elements is that they defer a particular selection which is pertinent to the achievement of target state to later in the discourse. In a formal sense they serve to fill a slot which the chaining rules mandate must be filled (p. 140).

A further type of extension and suspension is *reduplication* which Brazil (p. 253) defines as:

Extensions and suspensions [which] can be initiated after nominal elements and adverbial elements by producing another element of the same kind.

Some examples taken from Brazil (p. 122) illustrate.¹¹

- (34) She inspected her passenger, the little old lady

N V d N+ d e e N

- (35) This old lady, this bloke, got out

d e N+ d n V A

In (34) the speaker has run through a simple chain (NVdN) without attaining target state. To achieve target state, she extends the chain by producing a reduplicating N element which achieves target state. The reduplicating suspensive N element *this bloke*, in (35), fails to result in a further intermediate state and the speaker remains obliged to produce the following VA elements anticipated by the first N of the reduplicating pair *old lady, this bloke*.

Brazil argues that the absence of certain predicted N elements in a chain (pp. 33–8) is foreseeable. Two examples demonstrate:

- (36) They inspected the car she'd parked outside

N V d N+N V V' Ø¹² A

- (37) The street she went along was pretty quiet

d N+ n v p Ø V A E

In (36) and (37) the second mentions of *the car* and *the street* have a zero realization. Brazil (p. 138) claims that this zero realization is both mandatory and predictable. He proposes a rule that any N in a subchain following the

subject N has a zero realization if its realization would amount to a second mention of the first N of a reduplicating pair. In (36) we find the extensive subchain *she'd parked* \emptyset *outside*. The subject of the subchain is *she* and the N element, *the car* is the first N of the reduplicating pair *car, she*, and has a zero realization in the subchain. Similarly in (37) we find the suspensive subchain *she went along* \emptyset . The subject is *she* and the N element, *the street*, has a zero realization.

Brazil (pp. 136–7) discusses the presence of *optional elements* such as *that* and *who(m)* in the chain. He provides two illustrative examples:

(38) She drove past the turning that she wanted
 N V P d N+ N N V \emptyset

(39) She drove past the turning she wanted
 N V P d N+ \emptyset N V \emptyset

The first thing to note is that in (38) and (39) there is no second mention of *the turning*. All that has occurred in (38) is that an element *that*, which is redundant both as a filler of a slot and as a carrier of information, has been overtly realized at the beginning of the subchain prior to the subject. Brazil speculates plausibly that the insertion of such redundant elements may be a consequence of a learned prescriptive standard of written language (p. 137).

This section has described without critical comment Brazil's description of his grammar. The assumption that it is both necessary and useful to decompose an utterance into a string of word-like elements in order to provide a full and accurate description of an utterance will be reviewed in Chapter 4.

2.2.5 Asking exchanges

Up until this point we have only presented the chaining rules for telling increments. Brazil claims that the difference between asking and telling increments lies in who knows what. In a telling increment the speaker's contribution on its own can achieve target state. In an asking increment the contributions of both the speaker and hearer are required to achieve target state. Brazil proposes no formal syntactic or intonational distinction between asking and telling increments (p. 192). Thus:

(40) What am I going to do now

(41) She said that

could be either the first speaker's *initiating* increment¹³ in an asking increment or a telling increment. However, contra Brazil, strings of elements with subject verb inversion such as *Did she go to Paris with her boyfriend*, or with postposed WH like *You were meeting her where* do not seem to have the potential to tell and are initiating increments unless preceded or followed by a projected mental or reporting clause such as *I wonder/ I said*.

It is apparent that the chaining rules given for telling increments are insufficient to account for all increments. Stereotypical initiating increments such as

(42) Would you like coffee or tea

commence with a V element and not the expected N element. This apparent breach of the order of the chain is not, according to Brazil, problematic. He argues that:

We can restate the rule which applies to Initial state as 'produce an *N* and a *V* in whichever order present discourse conditions require'. (p. 196)

The discourse conditions in (42) require the speaker to produce an initial V element which is then followed by the obligatory N element.

2.2.6 Summary

Brazil's chaining rules are summarized below.

1. The speaker produces initial N and V elements in whichever order discourse conditions require.
2. The speaker is obliged to continue until, either alone or with the hearer's contribution, a target state is achieved.
3. Elements prior to the initial N or V are suspensive.
4. When speakers produce suspensive elements they have an obligation to continue along the chain from the state reached prior to the suspensive elements.
5. When speakers run through the simple chaining rules without achieving target state they are obliged to produce one or more extensive subchains until target state is achieved.

- 6. All N, V, E and A elements larger than a word are decomposed into strings of word-like elements.
- 7. Any N element in a subchain following the subject N has a zero realization if its realization would amount to the second mention of the first N of a reduplicating pair.

2.3 Intonation Systems Explicitly Mentioned as being Worthy of Exploration

Brazil concedes that his grammar is by no means complete and that a fuller description must include intonational features other than the presence or absence of P tone. He states that:

The intonation features that are manifested as changes in pitch level (as opposed to pitch movement) at prominent syllables are not significant for our present description *as far as it has gone*. Further development of the same kind of analysis would require that we take note of the way they affect the communicative value . . . (p. 245) *Emphasis added*

Neither *key*, which is selected on the onset syllable, nor *termination*, which is selected on the tonic syllable, have as yet been incorporated into the grammar. Each key and termination selection represents a choice of high, mid, or low. Speaker selection of key and termination realizes the communicative values mapped out in Table 2.1.

Table 2.1 The communicative value of key and termination from Brazil (1997)

	Key	Termination
High	Tone unit is contrastive with expectations created by previous discourse	Speakers anticipate hearer adjudication
Mid	Tone unit adds to the expectations created by previous discourse: it is neither contrastive with nor equivalent to the expectations created by the previous discourse	Speakers expect hearer concurrence
Low	Tone unit is equivalent to the expectations created by previous discourse	Speakers project no expectation, i.e. they neither anticipate hearer adjudication nor expect concurrence

Brazil's grammar is based upon on the premise that a well-formed increment satisfies an individual communicative need. It encodes how speakers assemble their message, word-like element by word-like element; describes how speakers signal their apprehension of the state of speaker/hearer convergence and signals whether their primary purpose is to tell or ask. An example from Brazil (p. 245) illustrates:

- (43a) // R and my friend just PUT her FOOT down // P and \uparrow SPED OFF //
- (43b) // R and my friend just PUT her FOOT down // P and SPED OFF //
- (43c) // R and my friend just PUT her FOOT down // P and \downarrow SPED OFF //

The proclaiming tone in (43a–c) labels the speaker's utterances as potential telling increments. However, the high and low-key selections in (43a and 43c) respectively represent a more delicate selection. In the former, the telling realized in the second tone unit is labelled as being contrary to the previously generated expectations; the hearers were surprised that the friend *sped off* rather than performing some other less surprising action. In the latter, the low key labels the telling realized by the second tone unit as being equivalent to the previously generated expectations; the act of *speeding off* equals the act of *putting her foot down*.

Non-mid termination also represents a more delicate selection, e.g.

- (44a) // R and my friend just PUT her FOOT down // P and SPED \uparrow OFF //
- (44b) // R and my friend just PUT her FOOT down // P and SPED \downarrow OFF //

The high termination in (44a) invites hearer adjudication: the speaker anticipates a high-key response which signals the speaker's projected belief that the *friend's speeding off* was not what the hearer expected. Brazil (1997) argues that low termination signals the closure of a unit of speech larger than the tone unit known as the *pitch sequence* which represents 'a discrete part of the utterance' (p. 246). It seems likely that pitch sequence boundaries will tend to coincide with increment boundaries (but see (45) where the first pitch sequence boundary occurs mid-increment, though at the end of a syntactically complete chain or in Sinclair and Mauranen's terminology at a point of completion). The relationship between pitch sequence endings and increments boundaries will be examined in Chapter 7.

In Brazil's account of Discourse Intonation pitch sequences contract the same relationships between themselves as tone units do, e.g.

- (45) //R and my friend just PUT her FOOT down // P and ↑SPED OFF //
 P as FAST as she ↓COULD // P ↓HAPpy to be ↓aLIVE //

There are two pitch sequences in (45) the first of which ends with the word *could*. The second pitch sequence, a single tone unit, has initial low-key signalling that it is equivalent to the first pitch sequence; the speaker projects an understanding of the state of speaker/hearer convergence that the *friend's happiness to be alive* is equal to the expectations which were previously generated by the discourse.

All examples discussed in this section have *extended tonic segments*: tone units with more than one prominent syllable. Brazil (1997: 14) states that tone units with only one prominent syllable have *minimal tonic segments*. In minimal tonic segments there is no possibility of the independent selection of key and termination: they are concomitantly selected on the tonic syllable (ibid. 61). Brazil (ibid. 63) provides example (46):

- (46) // he's ↑LOST //

and argues that:

In order to invite adjudication, he/she [a speaker] may attach unnecessary, but harmless contrastive implications to *lost* by reason of the concomitant high-key choice.

He argues (ibid. 62 and 63) that the communicative purpose realized by a mid-key selection is also usually realized by a high-key selection, but the communicative purpose realized by a high-key selection is not realized by a mid-key selection. Information that is contrary to expectations is always additive but information that is additive is not always contrary to expectations. This suggests that speakers who wish to invite adjudication may on occasion attach 'unnecessary, but harmless contrastive implications' to their utterances. These contrastive implications are presumably harmless because they are overridden by the interlocutors' appreciation of the existing speaker/hearer state of understanding. Speakers presume that the implications generated by high key are tolerable in situations where hearers are aware that they are inviting adjudication.

Brazil's presentation of (47) (1997: 163) as an example of high key suggests that concomitant high key/termination may not always realize harmless contrastive implications.

(47) // AS for the SECond half of the game // it was ↑MARvellous //

He argues that different situations might favour either the interpretation that *the second half of the game was marvellous against expectations* or that *the only word to describe it is marvellous*. While he does not discuss whether or not the high key/termination simultaneously realizes a concomitant invitation to adjudicate, it presumably does. Therefore it seems that the simultaneous selection of high key and high termination may, depending on the context, indicate:

1. That the speaker invites adjudication and that any contrastive implications are harmless and overridden by the context.
2. That the informational content of the tone unit is contrary to expectations. It is not clear whether or not the speaker must also invite adjudication, or whether the speaker's invitation of adjudication can be overridden by the context.

Speaker selection of low termination in a minimal tonic segment simultaneously realizes the communicative purposes realized by the selection of low key. Brazil (1997: 64) argues that the extra implications realized by the selection of low key instead of a more communicatively appropriate mid key, in order to realize low termination may be redundant; low key signals that the tone unit is both additive and equivalent whereas selection of mid key is simply additive. However, the communicative purpose of equivalence realized by low key is not necessarily redundant as Brazil himself (1997: 64) illustrates:

(48) // he GAMbled // and ↓LOST //

(49) // he GAMbled // and LOST //

(50) // he WASHED // and put a ↓RECord on //

(51) // he WASHED // and put a RECord on //

He comments that a relationship of hyponymy exists between examples (48) and (49): there is no set of circumstances in which (49) is appropriate but (48) is inappropriate. Both examples assert that *a man gambled* and *that he lost*. Example (48) provides additional information that *the gambling* and

the losing were in the circumstances existentially equivalent. The extra information generated by the concomitant low-key selection in (48) may realize unnecessary but harmless implications of equivalence which are again presumably overridden by the interlocutors' apprehension of the state of shared speaker/hearer understanding. Brazil (ibid. 64) points out, however, that examples (50) and (51) are not necessarily hyponymous: (51) presents the two actions *of washing* and *putting a record on* as sequential; (50) as existentially equivalent. The extra information realized by a concomitant joint key/termination selection must as Brazil explains have 'some kind of justification in the context of the interaction'. This suggests that speakers in pursuit of their individual communicative purposes who wish to present their actions as sequential while signalling the end of a pitch sequence should produce example (52) rather than (50).

(52) // he WASHED // and PUT a ↓RECORD on //

To conclude, it seems that in some but not all instances of minimal tonic segments harmless but contrastive implications or implications of equivalence may be overridden by the context. This section has briefly described the systems of key and termination and also highlighted two points worthy of further exploration: namely the relationship between pitch sequence closures and increment endings, and whether in minimal tonic segments key and termination always realize independent significant communicative values.

2.3.1 Key and termination in increments

While Brazil did not discuss the communicative value of key and termination in increments some of his examples suggest that he believed key and termination selections realize communicative values which attach to stretches of speech other than tone units and pitch sequences. Examples (53) and (54) from Brazil (1997: 55) demonstrate:

(53) // i COULDN't go // ↑COULD i //

(54) // i ↑COULDN't go // COULD i //

He claims:

In (89) [here (53)] the assertion *I couldn't go* has mid key and thus meshes with a prevalent belief – perhaps made explicit earlier in the

conversation – that there was no possibility of the speaker going. If the utterance had ended at this point, the concomitant mid termination would mean that any responding *yes* would be expected to be mid key – some kind of supporting *yes* that indicated the hearer's understanding that he/she *couldn't*. By adding the tag however, the speaker alters the utterance-final termination choice to high. The addressee is now invited to adjudicate: '... Could I, or could I not?' In (90), [here (54)] there is a high-key choice in the assertion and this gives it a force of a denial that the speaker *could* go. If he/she stopped at this point, the concord expectation would operate in such a way as to invite the hearer to say whether the denial was justified or not. The speaker evidently does not want his/her assertion to be evaluated in this way, since the mid termination in the tag invites concurrence.

In other words, the termination choices in the second and increment-final tone units override the termination choices in the first and increment-initial tone units. In a similar manner Brazil (1984: 37) describes the relative pitch level of prominent syllables in tags solely as termination selections and does not discuss the communicative value putatively realized by the simultaneous selection of key. Indeed, a tone unit by tone unit analysis of the communicative value of the key and termination selections in examples (53) and (54) results in a far less intuitively satisfying analysis. The high key/termination tag in (53) presents the proposition *could I* as contrary to expectations and invites adjudication. However, the initial mid key/termination has previously labelled the proposition as neither contrary to expectations nor invited adjudication; the communicative values expressed by the key/termination selections are contradictory. In (54) the high key/termination projects the content of the initial tone unit as contrary to expectations and simultaneously invites adjudication. The mid key/termination projects a context where the second tone unit is additive and also expects concurrence. But the question arises as to what exactly the tag adds to the context and what exactly the hearer is expected to concur with. The answer seems to be that the tag adds nothing to the context of interaction and that if one adopted a tone unit by tone unit analysis of key and termination selections that the communicative value of (54) would be identical to that of (55).

(55) // i ↑COULDn't go could i //

However, this does not appear helpful, for if speakers wished to concomitantly signal that the utterance was contrary to expectations and invite adjudication

they could have produced (55) instead of (54). Furthermore, the speaker could have unambiguously signalled the key and termination selections by producing utterances with a single extended tonic segment:

(56) // i COULDn't go ↑COULD i //

(57) // i ↑COULDn't go COULD i //

However, Tench (1996: 38) reminds us that these examples are unlikely. Checking tags, if made prominent, have a tendency to form their own tone units. Therefore it appears that if speakers wish to unambiguously label their utterances as having separate key and termination values they must produce utterances such as (53) and (54). This in turn suggests that key and termination as well as operating in tone units and pitch sequences also have the potential to operate in increments. Examples (53) and (54), presented below as increments in (58) and (59) respectively, suggest that the initial key serves as the key for the entire increment as likewise does the final termination e.g.¹⁴

(58) // P/R i COULDn't go // P/R ↑COULD i //

N V V' V N #

(59) // P/R i ↑COULDn't go // P/R COULD i //

N V V' V N #

The final high-termination choice in (58) invites adjudication of the entire increment while the initial mid key projects the increment as neither contrary to expectations nor equative. The initial high key in (59) presents the increment as contrary to expectations and the final mid termination expects concurrence.

Moving away from tag questions we find example (60) from Brazil, Coulthard and Johns (1980: 168) which is simultaneously an increment and a pitch sequence.

(60) // ↓FRICtion // r and when we ↑RUBbed our PEN //

c w+ N V d N

o on OUR //

p d

// r JERsey // p we were CAUSing ↓FRICtion //

N+ N V V' N #

It is not necessary in an analysis which focuses solely on the relationship between pitch sequences to take notice of key/termination levels internal to the pitch sequence (Brazil 1997: 123). All that needs to be said is that the initial high-key selection labels the entire pitch sequence (or in this example increment) as containing information which is contrary to previously generated expectations while the first low-termination selection closes the pitch sequence.

To sum up, this section has argued that key and termination realize communicative value in the domain of increments and that a fully descriptive grammar must codify the communicative value realized by key and termination in increments.

2.3.2 Pitch peaks and troughs

Before looking more closely at possible communicative purposes served by key and termination in increments, it is useful to broaden the picture and consider what other scholars have written about high and low pitch at the beginning and the end of utterances. This is done in order to situate Brazil's work in the wider literature, and demonstrate that, whilst phrased differently, Brazil's work does not necessarily conflict with the work of others. However, Tench's (1990: 274) acknowledgement that perhaps Brazil's major contribution to the study of intonation was the development of key as an independent variable separate from tone should prove cautionary. Many other scholars have not abstracted the communicative value of relative pitch level from that of tone and so it will not be possible to match other scholars' definitions exactly with the categories of key and termination.

Brazil, Coulthard and Johns (1980: 61) argue that the downward drift of pitch across an utterance is exploited as an organizing position; speakers mark the boundaries of pitch sequences by producing low termination. This view is widely supported in the literature. For example, Rost (2002: 34) states that chunks of speech, known as paratones, which are similar to pitch sequences, correspond to global planning units of the speaker's text. Tench (1996: 24) summarizes the criteria for identifying phonological paragraphs or paratones. Among the criteria he identifies are: high pitch on the onset found in the initial tone unit of the paratone; a gradual lowering of pitch until the final tone unit is reached; and the depth of fall in the final tone unit is the lowest in the paratone. The unit described by Tench is clearly similar to Brazil's pitch sequence, but as his discussion of an extract from Brazil, Coulthard and Johns (1980: 145–7) makes clear it is not identical

with it. Examples (61) and (62) present the extract in Tench's and Discourse Intonation notation respectively. Tench identifies three paratones but according to the criteria of Brazil et al. (ibid. 61) there are four pitch sequences. Pitch sequence boundaries are identified solely by the presence of low termination; the height of the following onset is irrelevant for identification purposes.

- (61) 1 H 'Put your pens
 M 'down | 'Pencils
 L 'down ||¹⁵
-
- 2 H 'Now | be'fore I came to
 M 'school |
 L 'this 'morning |
 H
 M
 L I 'had my 'breakfast ||
-
- 3 H I had some 'cereal |
 M and I had some 'toast | and I had an 'egg |
 L
 H
 M and I had a cup of 'tea | and I had a 'biscuit |
 L
 H
 M and then I came to
 L school ||
-
- (62) (1) // o ↑PUT your pens DOWN // o PENCils ↓DOWN // ... 7
intervening tone units (2) // p ↑NOW // r+ be↑FORE i came
to SCHOOL // r+ ↓THIS ↓MORNING // (3) p i ↓HAD my
↓BREAKfast // (4) // r+ i had some ↑CEreal // r+ and i had an
EGG // r+ and i had a cup of TEA // r+ and i had a BIScuit //
p and then i came to SCHOOL // p and ↑YOU ... // ... 35
intervening tone units ... // you go to ↓SLEEP //

Brazil et al. (1980) classify the tone unit // p i ↓HAD my ↓BREAKfast // as a pitch sequence whereas Tench (1996), because of the absence of a high pitch on the immediately following onset syllable *had*, does not classify the

tone unit as the beginning of a new paratone and instead marks it as the final tone unit of the second paratone. The boundary between the second and the third paratone is signalled by the combination of low pitch on *breakfast* and the immediately following high pitch onset on *cereal*.

Working within Discourse Intonation Barr (1990: 11) and Pickering (2004: 24) recognize what they refer to as the *sequence chain* which consists of one or more pitch sequences bounded by an initial high-key onset and completed by a low termination which is itself immediately followed by a high key. The second phonological paratone identified by Tench is a sequence chain which contains two pitch sequences. It seems that paratones are more closely related to sequence chains than they are to pitch sequences. However, Tench (1990: 277) states that pitch sequences usually begin with high key and, thus, tend to conflate with sequence chains.

Other scholars agree that high initial pitch signals the beginning of a new paratone while low pitch, at least partly, signals the closure of the paratone. Brown, Currie and Kenworthy (1980: 26) argue that the delimiting criteria for paratones are pause followed by an initial high pitch reset, though they also recognize that speakers signal the completion of an existing paratone by 'dropping low in their pitch range' (ibid. 25). Thompson (2003: 9) recognizes low termination followed by a high onset as the criterial features for identifying phonological paragraphs. Cutler and Pearson (1986) describe a carefully designed experiment where ten speakers read two versions of five dialogues which differed only in the order of the sentences. In one version, a particular sentence was turn medial; in the other turn final. These sentences were then judged in isolation as either turn medial or turn final. They found that the intonation feature which correlated most highly with the perception of finality was a tonic syllable pitched significantly lower than the previous syllable,¹⁶ while turn medial sentences correlated most closely with a tonic syllable pitched higher than the previous syllable (ibid. 152).

Brown, Currie and Kenworthy (1980: 136) argue that speakers mark new topics or subtopics by raising initial stressed peaks and that if speakers wish to signal that their contribution is a continuation of an existing topic they will produce an initial pitch which is low in their pitch range (also Brown 1990: 92, Couper-Kuhlen 1996: 398, Cruttenden 1997: 123, and Gussenhoven 2004: 71). Brown et al. note that their analysis 'bears a close resemblance to that of Brazil who has examined the role of "key" in discourse'. However, they find evidence for only two pitch levels: high and low (1980: 137): a view implicitly supported by Gussenhoven (2004: 114–15) and by those working within the autosegmental tradition.

There is widespread support in the literature for the existence of *declination* both in English and in many other languages. The term 'declination' was coined by Cohen and 't Hart (1967: 184) to describe the downward trend of pitch observable across many utterances in Dutch. Cohen and 't Hart, and others working within the IPO¹⁷ tradition, regard declination as no more than a phonetic (i.e. not communicatively significant) phenomenon, e.g. ('t Hart 1998: 100) though they recognize that speakers can exploit declination for linguistic purposes by resetting a natural declination by producing a high onset ('t Hart and Collier 1990).

Gårding (1998: 121), in the case of Swedish, argues that the slope of declination is dependent solely on the length of the sentence. I take this to mean that shorter sentences have steeper slopes than longer ones irrespective of individual speaker communicative purposes. The belief that declination is a gradual, and to a large extent regular, tapering off of pitch has led numerous scholars to produce mathematical models of the pitch contours of utterances (e.g. Fujisaki 1983 for Japanese; Gårding 1983 for Swedish; Gårding 1987 for Chinese). Such views are dubbed 'overlay' models by Ladd (1996: 24) who notes a number of potential problems with them including the following. First, none of the proposed models has produced a quantitative definition of the components they presuppose, e.g. there is as yet no quantitative characterization of the slope of declination. Second, the lack of precise definition of a pitch contour as a mathematical function renders them incapable of prediction (ibid. 27). Third, all overlay models are grounded upon the unproven assumption that intonational meaning can be related directly to acoustic correlates presented as a pitch contour without any mediating phonological categories (ibid. 20–4).

A note of caution in placing sole reliance on acoustic measurements is also required. Pitch is usually taken to refer to how F0 is perceived by hearers but other factors such as vowel quality; the nature of the surrounding consonants (i.e. voiced or voiceless); loudness and duration also influence how people perceive pitch (Chun 2002: 5). Thus, changes in absolute F0 values may not always be heard as changes in pitch level.

In an investigation of the intonation of Greek, Botinis (1998: 294) argues that while the final juncture is lower than the initial one, pitch does not decline gradually across an utterance. Instead, he proposes, that reported instances of declination in a number of languages may be artefacts arising out of the relatively simple utterances utilized in laboratory experiments. Cruttenden (1997: 121) reports that acoustic measurements of pitch peaks in conversational speech have found little evidence of declination. Tench (1996: 28) notes that the recognition of phonological paragraphs is most

apparent in pre-planned discourse such as news-reading, bible-reading and anecdotes. He states, however, that it is not impossible to find phonological paragraphing in more spontaneous forms of discourse.

Wichmann (2000: 108) produces corpus evidence¹⁸ which both favours and disfavours the theory of *supradeclineation*: the decline of pitch across paratones in English. While the pitch level of the initial onset of the first sentence tended to be highest and the pitch level of the initial onset of the final sentence tended to be the lowest, the pitch levels of the initial onsets of the intervening sentences did not exhibit a gradual decline. She attributes this lack of supradeclineation within paratones to both the information structure inside sentences and the rhetorical relations between sentences (ibid. 118). She states:

A shift from a 'new' topic to 'additional but related' information seems to generate a step down in pitch, while a shift from 'background' information (e.g. elaboration or explanation) to 'new' or 'additional' information prompts a step up. Only a shift between sentences of *equal* rhetorical value ('new' – 'new' or 'addition' – 'addition') does not appear to have a systematic effect on scaling.

Wichmann's view is close to that of Brazil in that she recognizes three communicatively significant values of key and attributes values similar to those proposed by Brazil.

In an investigation of the phonetic clues hearers use in order to identify the 'spoken equivalent of sentences' Nakajima and Allen (1993) measured the height of F0 peaks between the utterance units within speaker turns in a simulated conversation and found that that a high F0 reset signalled topic shift, a mid F0 reset signalled topic continuation and a low F0 reset signalled elaboration.

Scholars (e.g. Liberman 1975, Pierrehumbert 1980) who work within the autosegmental/metrical tradition do not recognize phonological units such as paratones. Instead they notate speech as a linear string of high and low tones on stressed syllables. The phonetic scaling of an individual high (H) or low (L) tone depends upon a variety of local factors such as emphasis and information structure. H tones signal that the items made salient are to be treated as new to the discourse (Pierrehumbert and Hirschberg 1990: 289). L tones mark items made salient which are not intended to alter the hearer's existing beliefs (ibid. 291). Within an utterance H tones at the beginning are higher than H tones at the end. Finality is signalled by a final prominent syllable which attracts the lowest pitch

accent in the utterance. While neither the system of key nor termination is found in Pierrehumbert and Hirschberg (1990), Wennerstrom (2001a: 278 fn6) notes that Pierrehumbert (1980) includes a phrase-initial high or low boundary tone which, she states, is similar to high and low key respectively.

It is widely reported in the literature that speakers raise and lower the level of their pitch range to express emotion. For example, Brazil et al. (1980: 23) state that speakers may expand their pitch range to express excitement, surprise and anger and that they may narrow their pitch range to express boredom and misery. However, they go on to state that regardless of whether their pitch range is narrow or wide, speakers use the same number of pitch contrasts to express linguistic meaning (ibid. 24). They choose high, mid and low key within the expanded or narrowed pitch range to convey their meaning.

The work cited above has discussed the intonation of pre-planned discourse: e.g. Brazil, Coulthard and Johns (1980) a teacher's lesson; Thompson (2003) and Pickering (2004) academic lectures; Wichmann (2000) news-reading. It is possible that in naturally occurring spontaneous multi-party interacts that there may not always be clear evidence of phonological paragraphing because speakers do not have sufficient time to prepare pre-planned global planning units for a number of reasons such as processing hitches, competition for the floor or interruptions.

To summarize, Section 2.3.2 has shown that there is extensive support in the literature for the existence of phonological planning units such as pitch sequences and paratones. Pitch sequences, while similar to paratones, are not always identical to them. It discussed the communicative significance of high pitch on the initial onset of a paratone as signalling the introduction of a new topic into the discourse. While the pitch level of onsets tends to decline across a paratone, the decline in the pitch level of onsets is not uniform. To emphasize or indicate the rhetorical relations within paratones, speakers have the freedom to raise or lower their onset pitch levels. The end of the paratone is signalled by a final low pitch which is the lowest in absolute terms. Evidence for the existence of phonological paragraphing is stronger in pre-planned discourse than in spontaneous discourse. It is not possible to draw more explicit links between Brazil's theory and the wider literature for a number of reasons: the domains in which the initial pitch level serves a communicative purpose differ: pitch sequences, paratones and spoken sentences are not necessarily identical in extent; some scholars propose only two values for key high and low though others have found evidence of three values for key.

2.3.3 Terminal pitch level

Termination has only been discussed above tangentially in relation to pitch sequence closures. This section attempts to link Brazil's work on termination with the wider literature in order to show that while phrased differently Brazil's claims are supported. This section first discusses the difficulty of identifying termination values in the work of other scholars; then reviews the work of others who have not decoupled termination from tone; finally it reviews the work of one scholar, Esser, who, like Brazil, recognizes three termination values: high, mid and low.

Tench (1990: 276) argues that termination 'is the way Brazil distinguishes, for example, between falls, fall-rises and rise-falls from high, from mid and from low, and rises to mid and to high'. Tench's remark suggests that it may be difficult to abstract the communicative value of termination in the systems of others who do not decouple tone and termination, and to compare their claims directly with those of Brazil. Cruttenden (1997: 106) describes Brazil's approach as a two tone approach: the distinction between tones that fall and those that rise. Conflating these two primary tones with the three termination values gives a taxonomy of six secondary tones whose communicative values are summarized in Table 2.2. Brazil et al. (1980: 25) argue that even though they hear termination 'as an independent, simultaneous, choice rather than as a "secondary one" depending on the speaker's having selected a particular tone', falling tone coupled with high, mid or low key is 'not unlike' what 'Halliday handles in terms of the three variants of end-falling tone'. Similarly we can speak of three variants of end-rising tone: high, mid and low.

Table 2.2 The communicative value of tone coupled with termination

Tone	Termination	Communicative value
Falling/rise-falling	High	Projected to alter the existing state of speaker/hearer understanding; invites adjudication.
Falling/rise-falling	Mid	Projected to alter the existing state of speaker/hearer understanding; expects concurrence.
Falling/rise-falling	Low	Projected to alter the existing state of speaker/hearer understanding; releases from all expectations.
Rising/fall-rising	High	Projected not to alter the existing state of speaker/hearer understanding; invites adjudication.
Rising/fall-rising	Mid	Projected not to alter the existing state of speaker/hearer understanding; expects concurrence.
Rising/fall-rising	Low	Projected not to alter the existing state of speaker/hearer understanding; releases from all expectations.

Many scholars such as Pike (1945), O'Connor and Arnold (1973), and Brown (1990) recognize high, mid and low variants of falling and rising tones but as their theories of intonation are premised upon the belief that the primary function of intonation is attitudinal, discussion of their views will be confined to points where direct links can be made between their views and those of others who recognize that intonation also functions communicatively to regulate discourse.

Halliday (1967: 53) and Tench (1996: 75) argue that a mid fall is the neutral or unmarked choice; high and low falls realize secondary tones. Mid falls indicate either major information and/or they complete the utterance (Tench 1996: 80–1). Selection of a marked tone, they claim, realizes an additional attitudinal function. A high fall signals a forceful attitude or the unexpectedness of the information;¹⁹ a low fall signals a mild attitude or that the information is expected.

Pike (1945) notates both the pitch level from which the tone movement occurs and the pitch level to which it rises or falls. He marks four levels of pitch with 1 the highest and 4 the lowest. Falls from 2 to 4 are moderate and recognized as neutral and are, according to Pike (ibid. 45), 'possibly the most frequent for the majority of English speakers'. Pike classifies falls from 1 to 4 as 'wide' while falls from 3 to 4 are 'narrow'. Wide and narrow falls have distinctive meanings which Tench (1990: 425) points out are 'identical to Halliday's'. However, Pike also recognizes 'half falls' such as 2 to 3, 1 to 3 and 1 to 2 which do not appear in Halliday's taxonomy and to which Pike ascribes distinctive attitudinal meanings. Half falls, however, are classifiable in terms of high, mid and low termination: any fall from 1 is, in Brazil's terminology, a fall coupled with high termination; from 2 it is a fall with mid termination and from 3 a fall with low termination. Brazil, however, unlike Pike, does not regard the depth of the fall as communicatively significant.

Prior to moving on to discuss termination coupled with rising tone it is useful to draw some similarities between the work discussed above and that of Brazil. The notion that 'mid' is the neutral value accords well with Brazil's view that mid termination expects concurrence: speakers neither invite adjudication of their utterances, i.e. invite a contrastive high-key response, nor signal that they have no expectations as to their hearer's response. The factor 'high' adds forcefulness or signals the unexpectedness of the information which appears to be precisely the sort of information which a speaker might invite adjudication of, and the factor 'low' indicates that the information is expected or routine, i.e. information that neither invites adjudication nor expects concurrence.

Brazil's system of termination with its tripartite division into high, mid and low is less supported when we turn to a discussion of the extra communicative value added to end-rising tones by the factors 'high' and 'low'. Halliday (1967; 1970), like Brazil, recognizes two types of end-rising tones: rises and fall-rises but, unlike Brazil, he recognizes only two variants of the rise, high and low, and two variants of the fall-rise, mid and low. Halliday does not ascribe one unitary value to all instances of end-rising tone. He claims that a high rise in a *wh*-question indicates a mild or deferential speaker attitude; in a polar question it indicates a neutral speaker attitude, although, O'Connor and Arnold (1973: 46), Crystal (1975: 39) and Cruttenden (1997: section 3.4.1.3) argue that the low rise is the neutral tone for polar questions. In a statement it signals that the speaker seeks confirmation or contradicts or denies an expectation. A high rise with a low pre-tonic²⁰ – O'Connor and Arnold's (1973: 202) pattern 7 *high bounce* – signals speaker intensity such as showing surprise, concern or disapproval. Low rises with low pre-tonics – O'Connor and Arnold's (1973: 143) pattern 3 *take off* – express a speaker attitude of unconcern or uncertainty. With high or mid pre-tonics, low rises in statements express unexpected speaker expectation or indicate reassurance. In commands they express a polite attitude.

Tench (1996: 77) like Brazil, recognizes high, mid and low rises but like Halliday, he does not ascribe a single abstract value to all realizations of rising tone. He argues that the mid rise is the neutral rise and that that low and high rises realize extra communicative value. Rising tone in declaratives in non-final position indicates incomplete information; in final position it indicates minor information (ibid. 80–1). The high rise is associated 'with a stronger sense of querying, suggesting surprise or even disbelief' while the low rise 'suggests a non-committal or even grumbling attitude'. Crystal (1975: 38), who recognizes only high rises and non-high rises, similarly, argues that high rises in any position are indications of definite emotional commitment while pre-final non-high rises are attitudinally neutral. Both Tench and Halliday recognize two variants of the fall-rise and they both agree that a mid fall-rise is neutral. Non-final fall-rises serve to highlight the theme while in utterance final position they express speaker reservation. A low fall-rise expresses a stronger reservation (Halliday 1967: 41) or in Tench's (1996: 128) terms it is labelled as 'strongly contrastive/implicational'.

It is difficult to abstract a common value for 'high' and 'low' from the claims presented above. However, it seems that when conflated with the rise, the factor 'high' is employed to convey something unexpected, such as surprise, disapproval or uncertainty. These local meanings do not necessarily conflict with Brazil's claim that high termination invites adjudication: the

unexpected appears more in need of adjudication than the predictable or routine. The communicative significance of the factor 'low' is harder to paraphrase as its communicative significance varies with different pre-heads according to Halliday. Tench (1996: 129–30) shows that low and high pre-tonics play a part in the expression of attitudinal meaning. The low pre-tonic conveys what O'Connor and Arnold (1973) label 'a disapproving or sceptical pattern' while the high pre-tonic 'lacks a suggestion of disapproval'. Tench's label of 'non-committal' appears to capture the attitudinal value expressed by the factor 'low'. Speakers who wish to project a non-committal attitude appear neither to invite adjudication nor expect concurrence of their utterance. Halliday and Tench ascribe a different value to the factor 'low' in utterance-final fall-rises. Halliday labels them as signalling 'a strong reservation' while Tench suggests the label 'strongly contrastive/implicational'. But, if the meaning of an utterance-final fall-rise is to signal a speaker reservation or implication, the reservation or implication is only strengthened by coupling it with low termination: the speaker signals the reservation and simultaneously attempts to label the reservation as not being open for discussion.

Esser (1988) follows Brazil and decouples key and termination from tone. He employs the term 'key' to describe the pitch height of prominent syllables: his transcriptions notate both 'nuclear key' (in Discourse Intonation terms termination) and 'non-nuclear' key. He notates termination with a capital H for high, a capital L for low, and like Brazil (1997) he does not mark mid termination with any special diacritic. Key is notated with a lowercase h representing high, and a lowercase l representing low. Like mid termination, mid key is not notated.²¹ The criteria Esser employs to decide the pitch level of a prominent syllable are not entirely clear. However, he states that he 'like Brazil et al. (1980) distinguishes three "keys" [terminations] mid, high and low' (1988: 3) and so it appears that he employs similar criteria to Brazil et al. (1980).

Esser (1988: 67–80) argues that termination contributes to the presentation of the information structure of a text. High termination indicates that the tone unit it is contained in carries the most important information and the high termination itself falls within a word which is a *presentation peak*; a word which the speaker projects as being the most important.²² Intuitively it appears that speakers are likely to invite adjudication of what they consider the most important information in their utterance. Low termination functions as a strong means of subordination. Tone units with low termination contain information of less importance than tone units with non-low termination while simultaneously signalling the end of a paragraph (ibid. 80).

Esser proposes a hierarchy of neighbouring tone units which contain propositions of more or less importance signalled by tone and termination selections. He only recognizes two tones; end-falling and end-rising, and claims that falling tone presents the content as more important and rising tone as less important (ibid. 60). However, he also argues that high termination signals that the content of a tone unit is more important than one with mid termination which itself is more important than a tone unit with low termination (ibid. 66). Combining the values represented by tone and termination, he argues for the following hierarchy of tone units:

// ↑ .. // > // ↑ / .. // > // \ .. // > // / .. // > // ↓ \ .. // > // ↓ / .. //

²³

The major differences between Esser's system and Brazil's grammar are that he does not recognize a unit like the increment and this lack of recognition makes it hard to use Esser's hierarchical system of the presentation of content to describe discourse. He claims that his hierarchy applies to neighbouring tone units but does not define the extent of the neighbourhood within which tone units reside. A unit such as the increment provides boundaries for the neighbourhood. The second major difference is that Esser does not discuss how the communicative value of key labels content.

To sum up this section, most scholars have not decoupled termination from tone. The extra attitudinal implications realized by the non-neutral variants of the tones were described and the extra values realized by 'high' and 'low' were paraphrased and found not to be incompatible with the termination values posited by Brazil. Some evidence was presented that speakers use pitch peaks on tonic syllables to prioritise their language.

2.3.4 High-key and high-termination in increments

Speakers may ask for adjudication in order to satisfy their own social or informational needs, e.g. they may invite an evaluative high-key response to complete a quasi-asking exchange (Brazil et al. 1980: 78). The following examples from Brazil et al. (ibid. 77) illustrate:

(63) // p TIME to GO //

(64) // p TIME to ↑GO //

Brazil et al. (1980) claim that in (63) mid termination anticipates a mid-key response and so it realizes the local communicative value of telling *that it is time to go*. The speaker signals an expectation that the hearer is expected to

concur with the telling. In (64) the speaker tells but simultaneously invites adjudication. The high termination expects a high-key evaluative response: the hearer is invited to state whether in fact it is time to go. As neither (63) nor (64) contain initial N V elements they do not satisfy the grammatical chaining rules but (65) and (66) below are both, discourse conditions permitting, increments.²⁴

(65) // p it' s TIME to GO //
 N V N V' #

(66) // p it' s TIME to ↑GO //
 N V N V'

The mid-termination choice in (65) anticipates hearer concurrence that the speaker has told that it is indeed *time to go*. Example (66), likewise, fulfils both the grammatical and intonational criteria required to complete a successful act of telling. Yet Brazil et al. (ibid. 77) state that (66) asks if it is time to go; it seeks a contrastive yes/no response. Example (66) is therefore an initiating increment. The speaker invites adjudication and the act of telling is completed by the hearer's response. Examples (65) and (66) show that high termination may transform a telling increment into an initiating increment requiring adjudication.

Many instances of high termination are not overtly adjudicated by hearers. Example (67) originally from Halliday (1970: 127) illustrates.²⁵ In this extract, a male speaker is performing a pre-planned narrative about a railway line.

(67) // p ↑BY the time the great CENtral // r+ was BUILT //
 p d n d N v V'
 // o the ↑TRAINS could manage the GRAdients // p much more
 d N V V' d N A
 ↑EASily
 #
 // r and the GREAT CENtral line // p usually went a ↑CROSS valleys
 c d N+ N a V P d° N
 // r instead of ROUNd them // r like the EARlier railways //
 P P N P d e N Ø #

Example (67) contains two increments; however, the presence of the high termination at the end of the first increment complicates the picture. It is

clear that it is not an initiating increment which requires adjudication. Yet, by definition, all high terminations invite adjudication. In (67), the hearers did not overtly respond: their silence can be taken as a tacit positive adjudication. The lack of negative adjudication signals that the speaker has completed a telling increment. As an invitation proffered is still an invitation which the hearer may at least potentially decide to take up it is possible to imagine a context where the speaker and hearer are both railway buffs and the speaker is not entirely certain of his own knowledge. In which case the invitation to adjudicate functions in a similar manner to the high termination in (66); the increment is transformed into an initiating increment. Overt adjudication completes the increment while silence, i.e. tacit positive adjudication, retransforms the initiating increment back into a retrospective telling increment.

In (67) one further instance of high key/termination and two of high key occur. The initial high key on *by* functions to signal that a new topic which was not predictable from the context has been introduced into the discourse. The high key on *trains* in the third tone unit of the first increment indicates either that the information that *the trains could manage the gradients* contrasts with the previously established context or more likely signals a particularizing key: *trains* is highlighted as crucial over and above the surrounding information; the *trains* and nothing else could *manage the gradients*.

Had the speaker completed his utterance after the tone unit containing the high termination on *across* he would have completed an increment and invited overt adjudication that *the Great Central line usually went across the valleys*. However, for his own individual reasons, he chose not to invite overt adjudication. Instead he produced two further referring tone units both of which ended in mid termination and signalled that he anticipated concurrence of the increment. The high termination on *across* functions to focus the hearer's attention by inviting them to make a mental or private adjudication 'yes or no'. Such an invitation to privately adjudicate *whether in fact the trains went across and not through/round/under etc. the valleys* heightens the significance of the lexical element *across*. The speaker presents *across* as the most salient lexical item within the increment.

Example (67) suggests that increment-final termination invites adjudication of the entire increment. Increment-initial high key indicates that the following increment is contrary to previous expectations such as the abandonment of the previous topic or the introduction of a fresh topic. Instances of high key and high termination internal to increments add communicative value to tone units within the increment.

2.3.5 Summary

This section has suggested a number of points which need to be integrated into Brazil's description if the grammar is to be a complete grammar of spoken English discourse. These points are:

1. The recognition of the increment as an independent semantic unit. The communicative value realized by an increment is not equal to the sum of the communicative values realized by the tone units which make up the increment.
2. The initial key and the final termination in an increment attach communicative value to an increment and not just to the tone unit they are contained in.

The following chapter continues the outward evaluation of Brazil's grammar of speech by situating the premises which underlie his description within the wider literature.

Chapter 3

The Psychological Foundations of the Grammar

Chapter 3 situates the assumptions which underpin Brazil's grammar within the wider literature. Section 1 considers if the division of used language into telling and asking exchanges provides a realistic description of what people do when they engage in conversation. As the division of used language into telling and asking exchanges is ultimately dependent on the interlocutors' apprehension of the state of speaker/hearer understanding, Section 2 reviews the literature on the kind and amount of shared knowledge¹ required for successful communication. Brazil (1997: 70) argues that speakers frame their messages on the basis of their assumption of the state of 'speaker-hearer convergence' but does not develop a formal mechanism explaining how speakers are able to assess the state of speaker-hearer convergence. Section 2 shows that the apparently intuitive concept of shared knowledge is in fact problematic. A definition of shared knowledge which appears sufficiently robust to explain what people do when they communicate, and immune from the criticisms levelled at the concept of shared knowledge is proposed.

Sections 3 to 6 situate the premises which underpin Brazil's theory within the literature. Each one of Brazil's four premises, described in the previous chapter, is evaluated. First, the premise that *speech is purposeful*, a belief most closely associated with speech act theorists, is evaluated by describing the principles underlying speech act theory and evaluating claims that intonation signals illocutionary force and that intonation can disambiguate the illocutionary force of utterances. Then the premise that *speech is interactive* is examined. Discourse intonation is compared and contrasted with two influential theories which explore the discoursal function of intonation. Section 4 also reviews recent work which suggests that some instances of level tone are 'used language' and considers how such instances of level tone should be coded in the grammar. Section 5 evaluates the premise that *speech is cooperative*. It describes Grice's maxims, draws a connection between Grice's seminal work and the subsequent work of Sperber and Wilson, and shows how, despite

a number of problems, Sperber and Wilson's theory of relevance provides a useful theoretical framework for the investigation of speech as a purposeful cooperative happening. Finally the premise of *existential values*, i.e. speakers exploit the here-and-now values of linguistic items, is evaluated.

3.1 Asking and Telling Increments

Brazil (1995: 41) argues that used language consists of two kinds of exchanges: asking and telling. There is, he claims, no formal distinction between the chains which function as asking and telling exchanges: any increment may function either as an asking or telling one.² Meaning is not an inventory of structure but rather arises out of the more abstract relations which exist between the lexicogrammar, the physical situation, speaker purposes, the social relations between speaker and hearer and the previous discourse. Halliday and Matthiessen (1999: 328) remind us that a considerable amount of language which 'ranges from casual greetings and observations', falls within what Malinowski (1923) labelled *phatic communication*: the language of togetherness. The same wording employed by a speaker carries a different meaning if used in a different context. A meteorologist who says on television 'It is a cloudy day' reports a fact. The same meteorologist who says the same words to a friend while hiking may report a fact, signal a warning that it would be better not to delay, or engage in phatic communication. The meaning of language isolated from context is in many cases indeterminate. It is shared experience which allows linguistic meaning to be unpacked and enables utterances to be interpreted as reports, warnings, phatic communications, etc.

Grammatically there are three major kinds of sentence: *statements*, *questions* and *imperatives*. However, there is no one-to-one relation between sentence types and communicative functions such as *assertions*, *requests for information* and *commands*. To illustrate, a speaker who wishes a hearer to close a window can utter:

- | | | |
|-----|-----------------------------|--------------|
| (1) | It's cold in here | (Statement) |
| | Could you close the window? | (Question) |
| | Close the window | (Imperative) |

or a speaker who wishes to know a hearer's name may utter:

- | | | |
|-----|--------------------------|--------------|
| (2) | I want to know your name | (Statement) |
| | What is your name? | (Question) |
| | Tell me your name | (Imperative) |

Yet within a given context a hearer of the utterances in (1) understands that they are all requests to close a window and a hearer of (2) understands that they are all requests for information.

Labov (1972a: 124) notes that a great many speakers habitually use statements to request confirmations and hearers invariably recognize such statements as requests and not assertions. He proposes that hearers interpret speech based upon the concept of shared knowledge and categorizes all language events as *A-events*, *B-events*, and *AB-events*. He says:

Given any two-party conversation, there exists an understanding that there are events that A knows about, but B does not; and events that B knows about but A does not; and AB-events that are known to both. (ibid. 124)

Assuming that A is the speaker and B the hearer, A-events are instances where a speaker, in Brazil's terms, aims to expand the state of speaker/hearer convergence shared with B. He/she produces a telling increment in order to move the hearer to a new target state and achieve his/her communicative purpose. In a B event the speaker A requires the hearer's (B's) assistance to achieve his/her desired communicative purposes and produces an asking increment. Target state can only be realized by B's reply. AB events are instances where the speaker A projects a pre-existing state of convergence with the hearer B. In Brazil's terms the speaker refers and progress to target state is only realized by the speaker's following verbal contribution. Table 3.1 summarizes the relation.

Table 3.1 A-events, B-events, A-B events as increments

	Asking increment	Telling increment	Proclaimed
A-event	No	Yes: e.g. <i>John is meeting Mary later</i>	Yes
B-event	Yes: e.g. <i>When is John meeting Mary?</i> <i>Is John meeting Mary?</i> <i>John is meeting Mary?</i>	No	Yes for Wh example No for Wh, No for other examples
AB-event	Yes: e.g. [<i>You know that John is meeting later</i>] but what are they going to talk about?	Yes: e.g. [<i>John is meeting Mary later</i>] and then <i>they will play tennis</i>	No but followed by a tone unit with proclaiming tone

Labov makes no predictions about either the grammatical or prosodic form of A-events, B-events and AB-events. For him, it appears that the sole factor determining how hearers understand speakers' words is the concept of shared knowledge. Labov's category of shared knowledge includes not only knowledge of the previous discourse but also the discourse participants' knowledge of the roles, duties and obligations imposed upon them by societal rules. This is similar to Brazil's view that speakers frame their message depending on their apprehension of the state of shared speaker/hearer understanding. Labov's categorization provides strong support for Brazil's claim that used language can be categorized into telling and asking increments.

The categorization of speech into telling and asking increments appears to offer a realistic insight into how people communicate with one another. Yet, as such a categorization ultimately rests upon the concept of shared knowledge, it is imperative that a clear and sufficient definition of shared knowledge be formulated prior to any attempt to propose a grammar such as in Brazil (1995). The following section examines the concept of shared knowledge.

3.2 Shared Knowledge

The term 'shared knowledge', which appears at first glance to be intuitively transparent, in fact proves to be nebulous. There is little agreement in the literature as to the meaning of the terms *shared* and *knowledge*. The difficulty of pinning down an exact and measurable meaning led Prince (1981: 232) to argue that as the term shared knowledge means different things to different scholars the term itself must be abandoned prior to any investigation of its role in discourse. Lee (2001: 22–7) in contrast attempts to reclaim the term by re-defining it. He distinguishes *knowledge* from *belief* on the basis of the relative degree of certainty held by an individual. Knowledge refers to an individual's 100% certainty in the *truth*³ of a fact. Belief refers to a less than 100% certainty in the truth of a fact. *Mutual* and *shared* are similarly distinguished on the basis of certainty. *Mutual* indicates that the speaker is 100% certain that the hearer's knowledge or beliefs are identical to the speaker's own. *Shared* indicates a lesser degree of certainty and is usually based on second-hand rather than direct information. Lee defines *common* (or *background*) as referring to the knowledge or beliefs two individuals share as a result of their joint membership of a community and it is weaker than *shared*. The six proposed combinations are summarized in Table 3.2.⁴

Table 3.2 Classification of knowledge/beliefs in terms of certainty

	100% self-certainty of truth	Less than 100% self-certainty of truth
	Knowledge	Belief
100% certainty shared with hearer	Mutual	Mutual
Less than 100% certainty shared with hearer	Shared	Shared
Less than 100% certainty shared with hearer	Common/Background	Common/Background

To illustrate, imagine a man who has never tasted a papaya. Based upon his community membership, he is able to recognize that papayas are fruit and therefore, he assumes, taste sweet. This is his background belief. Out of curiosity he buys two papayas and brings them home. Upon seeing the papayas his partner comments that she adores their sweet taste. Based upon the partner's utterance the man's belief that papayas are sweet is strengthened. He has a shared belief with his partner. He offers her a papaya. He takes a bite out of the other; he knows that it is sweet. The woman takes a bite. It is clear that the man has a shared belief that both he and his partner believe that papayas taste sweet. But it is not entirely clear that the man and his partner hold shared or indeed mutual knowledge that papayas taste sweet.

Scholars who state that mutual knowledge is a prerequisite for successful communication argue that mutual knowledge is feasible between speakers and hearers. Others disagree. The primary objection⁵ found in the literature to both the existence and the necessity of mutual knowledge is the *Mutual Knowledge Paradox*. The paradox states that in order to be mutually certain that they possess mutual knowledge, a speaker and hearer must carry out an infinite series of regressive checks to confirm their mutual knowledge. Each check takes a finite though miniscule amount of time. As communication cannot take an infinite amount of time it is impossible for speakers and hearers to carry out the infinite series of regressive checks required to secure mutual knowledge (Clark and Marshall 1981: 15; Sperber and Wilson 1995: 15–21).

Scholars who believe in the essentiality of mutual knowledge posit two fixes which they claim circumvent the paradox. The first *truncation heuristics* is that speakers and hearers do not engage in an infinite series of regressive checks to secure the mutuality of their knowledge. Rather speaker/hearers only check regressively to a certain finite level. Bach and Harnish (1979: 309)

argue that speakers only need to check back three levels. Mutual knowledge is secured if:

A speaker knows that the hearer knows that the speaker knows that *t* is *R*.⁶

There are two main difficulties with this approach. The first is that it is possible to construct scenarios⁷ where such limited regression cannot guarantee mutual knowledge (Clark and Marshall: 1981: 13). The second difficulty is that restricting the speaker's regression to three levels is arbitrary. Lee (2001: 35) notes that Bach and Harnish fail to produce any evidence indicating that individuals engaged in communication limit mutual beliefs to three levels. Indeed other scholars, again without producing much evidence, have theorized that people engaged in communication make replicative assumptions to four or five levels (Harder and Kock 1976: 62) or to six levels (Kaspar 1976: 24). In any case, Clark and Marshall (1981: 14) produce a scenario which demonstrates that regression to five levels is not always capable of securing mutual knowledge and argue that it is possible to produce scenarios which demonstrate that regression to six or more levels does not always secure mutual knowledge.

The second purported fix is *co-presence heuristics* (Clark and Marshall 1981: 32–43) which argues that speakers do not engage in either an infinite or limited regression of checks in order to secure the mutuality of their knowledge. Instead they assure themselves of the mutuality of their knowledge by seeking independent confirmatory evidence. This evidence is of three kinds: *community membership*; *physical co-presence*, and *linguistic co-presence*. In other words, by utilizing independent evidence communicators are able to infer mutual knowledge.

There are, however, a number of potential problems with this view. First, an inference of mutual knowledge is not itself a hundred per cent certain and thus, by definition cannot itself amount to mutual knowledge (Sperber and Wilson 1995: 19). Second, speakers can have stronger or weaker supporting evidence of mutual knowledge (Wilks 1986: 268). A direct experience such as physical co-presence is stronger evidence than an indirect experience such as linguistic co-presence or a background experience such as community membership. But as mutual knowledge requires one hundred per cent certainty, the evidence securing it cannot be stronger or weaker. Third, Clark and Marshall's fix does not appear to be applicable to all types of language use. Consider:

- (3) *A man and a woman are both looking at a painting.*
 She says as she points at the painting: 'That is a Picasso'.

The man has evidence that the woman knows that the painting is a Picasso. If prior to her utterance he too was certain that the particular painting was a Picasso, he has evidence of mutual knowledge. Yet direct evidence is far less convincing in cases where the speaker evaluates rather than refers. Consider:

- (4) *A man and a woman are both looking at a painting. The man has admired the painting for years.*

She says as she points at the painting: 'That Picasso is beautiful'.

It can hardly be said that the man has evidence of mutual knowledge that he and woman evaluate the painting identically. At best he can strongly believe that they evaluate the painting in a similar manner; he has evidence for shared but not for mutual knowledge.

Successful communication occurs in cases, such as (4), where mutuality of knowledge does not appear to be either feasible or necessary. Therefore, the obvious conclusion is that successful communication does not rest on the mutuality of interlocutors' knowledge. Instead it rests on a lower standard. Prince (1981: 232) agrees and states that:

The view that says that each individual has a belief-set and that, for any two individuals, the belief-sets may be overlapping, the intersection constituting 'shared knowledge', [What this book labels mutual knowledge] is taking the position of an omniscient observer and is not considering what ordinary, non clairvoyant humans do when they interact verbally.

She introduces the term *assumed familiarity* and so explicitly denies that successful communication requires the guarantee of mutuality. Speakers, she claims, need merely to be able to hypothesize about their hearers' belief-states. Lee (2001), who holds an almost identical position, argues that speakers require shared knowledge or shared belief to enable them to communicate successfully in the vast majority of speech situations. He employs data taken from Brown (1995) to support his claim. Two subjects A and B were given slightly different maps with A required to update B's out-of-date map. They were not allowed any visual contact with one other and so were forced to update the map orally. Lee (2001: 38) argues that A and B required a limited recursion of three steps to establish that they held shared beliefs which enabled them to communicate successfully. For the map to be updated successfully B had to believe that A believed B had

a particular feature on B's map. He provides example (5) as support (ibid. 38).

	B	B/A	B/A/B
(5) A: you start below the Palm Beach, right	+	+	
B: right	+	+	+
A: you go over to quite a bit below			

The '+' symbol in the first column on the left indicates that B, who is looking at his/her own outdated map, knows that *the Palm Beach* is on the map. In the second column it indicates that B believes that A believes that *the Palm Beach* is on B's map. The evidence for this belief is the fact that A has referred to the *Palm Beach* as being on B's map. In the third column it indicates that B believes that that A believes that B believes that the palm tree is on B's map. B has provided evidence for this by confirming that A was correct to believe that the *Palm Beach* was on B's map.

This view closely resembles the truncation heuristics proposed by Bach and Harnish, but has the advantage of recognizing that communication is an inherently risky undertaking. Speakers and hearers often operate at cross purposes with no guarantee that they form correct assumptions about the extent of their shared beliefs. Clark and Marshall's criticism that limited regressive checks cannot guarantee mutuality does not apply because Lee, unlike Bach and Harnish, does not argue that mutuality is a prerequisite for successful communication.

Problems, however, still remain. The first relates to the data, Brown's map task which, although described by Lee (ibid. 21) as authentic, is hardly representative of most communication (see also Halliday and Matthiessen's (1999: 328) point that a considerable amount of language is not instrumental). It is not at all clear how experimental designs such as the map-task could be adapted to measure shared beliefs when speakers produce evaluative language. Halliday and Matthiessen (2004: 34) caution that what people say or understand under experimental conditions is very different from what they say or understand in real life. The second problem is that an individual's belief is not a physical thing⁸ and it is unclear how an individual can share another's belief. The third problem is that Lee defines belief as less than 100% certainty in the truth of a fact but does not suggest a threshold below which the speaker no longer believes. Nor does he propose a mechanism detailing how speakers are able to calculate the strength of hearers' beliefs.

Sperber and Wilson (1995: 20) argue that the requirement of mutual or shared knowledge is untenable, and furthermore that it is unable to describe 'how contexts are actually selected and used in utterance interpretation'. They provide the example:

(6) The door's open

and argue that the interlocutors may have mutual or indeed shared knowledge of hundreds of doors. But they note that reliance on such knowledge does nothing to explain how the choice of the actual referent is made. They propose instead the notion of *cognitive environments* (ibid. 38–9) which they argue are made up of manifest facts. They define the terms as following.

A fact is *manifest* to an individual at a given time if and only if he (sic) is capable at that time of representing it mentally and accepting its representation as true or probably true.

A *cognitive environment* of an individual is a set of facts that are manifest to him. (sic)

They draw a neat analogy between an individual's cognitive and visual environments which they define as being made up of all the visual stimuli manifest to a particular individual. To develop the analogy they propose between an individual's cognitive and visual environments, let us imagine a skilful tennis player. Based on her previous training, experience and memories and knowledge of the rules of the game she is able to predict quite accurately where her opponent is likely to return the ball.⁹ She does not need to peer into her opponent's mind in order to understand her opponent's intentions to anticipate the shot. Similarly a communicator does not need to peer into the intentions of the intended audience before producing the required linguistic stimuli.

People can alter others' visual environments even though they do not (and probably cannot) know the full extent of the others' original visual environments. For example, were you to enter a room after twilight and find your friend sitting in dark shadows, based upon your own visual environment you could be certain that she could not read a newspaper headline you had just placed on a table in front of her. To expand her visual environment to include the newspaper you would simply have to flick the light switch. Similarly when speakers communicate they draw upon their own cognitive environments to allow them to alter their interlocutors' cognitive environments.

Sperber and Wilson's proposal neatly solves the problem of solipsism implicit in accounts that require speakers to ensure they hold mutual or shared beliefs. Speakers engaged in successful communication are not required to hold any opinions as to whether or not they hold mutual or shared beliefs. Instead they form assessments based on their own perceptual abilities; their previous experiences and memories of deriving information from the environment. Sperber and Wilson recognize that communication is risky and that there is no guarantee that it always succeeds. Yet communication between people who share community membership; speak the same language, have similar memories of dealing with a common environment; and share basic perceptual abilities almost always succeeds. A similar view is expressed by Hasan (1996: 37–8) who partly defines the context of situation in which speakers' operate as 'filtered reality': the context is the part of the outside world which is filtered through the speaker's focus upon some part of his/her external environment. Hasan argues that the context of situation is not exclusively subjective but is also shaped by the semiotic codes prevalent in a community which mediate the environment in which its members live.

As speakers' perceptions of the extent of hearers' communicative needs are necessarily subjective, Hasan's views appear to differ from those of Sperber and Wilson as regards the social role of language. Sperber and Wilson regard communication as an almost exclusively psychological process: though their mention of *shared community membership* acknowledges indirectly that social factors impinge on the communicative process. Hasan argues strongly that, in the analysis of communication, scholars must pay heed to the way language shapes and is itself shaped by societal institutions. Yet she concedes that

the sharp distinction between the individual and the social, the unique and the conventional, is perhaps only an artefact of our analysis. (ibid. 38)

After all, everyone has been shaped by the interaction between the physical world, their language and the relevant societal institutions. Sperber (1996: 1) claims that culture is formed from the circulation of linguistically encoded ideas. The more the ideas are repeated, the more conventional they become. The use of language to encode ideas, according to this view, accounts for differences between human cultures. Shared community membership is itself shaped by language use. To conclude, the differences between Hasan, and Sperber and Wilson seem to be more apparent than real.

To sum up, it is a truism that when individuals communicate they, in some sense, share information and that unless there is some common ground

between the interlocutors communication is likely to fail. As a result, some scholars have proposed that for communication to succeed, interlocutors must recognize that they possess mutual knowledge or mutual beliefs. A problem with this view was raised and two purported fixes were described. However, it was demonstrated that neither fix is entirely satisfactory. A weaker view that speakers only need to recognize that they and their hearers hold shared beliefs was described, but was shown to be not entirely convincing. Finally a view which circumvented the problems inherent in the claim that it is possible to gaze at the contents of another's mind was described, and was shown to be robust enough to account for success and failure in conversation. Thus, Brazil's claim that all used language can be divided into telling and asking increments no longer rests on the imprecise notion of speakers' comprehension of the extent of shared speaker/hearer state of convergence but rather on the firmer grounds of their understanding of their own individual cognitive environments. Speakers decide what requires telling not by evaluating the extent of their shared knowledge or by peering into their interlocutor's minds but rather through their own experiences and memories which they have gleaned from a lifetime's residence in their particular speech communities.

3.3 Speech is Purposeful

Brazil (1995: 26) states that speech is characteristically used in pursuit of individual daily purposes which are essential for the 'management of human affairs'. Brazil acknowledges (ibid. 36) that his view builds upon the insights of numerous scholars of whom Austin and Searle were the pioneers. Austin (1975: 3–7) noted the distinction between speech as description and speech as action, and distinguished *constatives*: descriptive utterances which are judged to be true or false from *performatives*: utterances which do not report and cannot be judged to be true or false. He claims that a participant in a legally constituted marriage ceremony who says '*I do*' performs a speech act which instantiates the marriage; it does not report it. Leech (1983: 180), however, argues that such acts are not communicative but are instead 'the linguistic parts of rituals' which have communicative value only because of convention. To illustrate Leech's sage observation, in an English speaking jurisdiction which adopted Sharia law the utterance *I divorce thee* repeated three times is performative and instantiates a divorce but it does not do so in other English speaking jurisdictions.

In the course of his investigation, Austin (1975) realized that all utterances can be viewed as instances of action as well as descriptive reports. He argued that the saying of an utterance performs a *locutionary act*:¹⁰ an *illocutionary act*; and in most instances a *perlocutionary act* (ibid. 98–102), e.g.

- (7) He said to me *Shoot the dog!* **Locutionary act.**
 He urged/ordered/advised etc me to shoot the dog. **Illocutionary act** (of urging, commanding, advising etc.).
 He persuaded me to shoot the dog. **Perlocutionary act.**

The speaker performs the locutionary act by uttering *shoot the dog*. Searle (1969: 47), following Grice (1957/89),¹¹ argues that speakers produce illocutionary effects by means of getting their hearers to recognize their intention to produce the illocutionary effects. In (7) a successful illocutionary act is produced if the hearer recognizes that he/she has been urged/commanded/advised, etc to shoot the dog. The perlocutionary act is the effect the utterance has on the hearers; in this case a successful perlocutionary act results in the hearer shooting or attempting to shoot the dog. Searle does not propose a mechanism explaining how hearers are able to recognize speakers' intentions. This omission is not, however, problematic as the concept of cognitive environments outlined in Section 2.2 is well capable of explaining how people recognize the communicative intentions of others.

Austin (1975: 150) suggests that the number of different kinds of speech acts runs into the thousands.¹² He has been criticized by Leech (1983: 175) and Searle (1979: 2) for equating the number of speech acts with the number of verbs in English. Searle (1969: 30) states that the illocutionary force of an utterance is indicated by a number of devices which:

include at least: word order, stress, intonation contour, punctuation, the mood of the verb, and the so-called performative verbs.

Yet, as Leech (1983: 177) points out, Searle's classification of speech acts is based solely on the analysis of performative verbs. Searle (1998: 146–50) proposes the following taxonomy of speech acts which he claims accommodates all instances of speech.

- (1) *Assertives*: which are literally true or false.
- (2) *Directives*: which aim to get the hearer to behave in such a way that his/her behaviour matches the propositional content of the utterance, e.g. commands and requests.

(3) *Commissives*: which commit the hearer to undertake the course of action represented in the propositional content of the utterance, e.g. promises and guarantees.

(4) *Expressives*: which express the sincerity condition of the speech act, e.g. congratulations and condolences.

(5) *Declarations*: which aim to bring about a change in the world simply by representing the world as having changed, e.g. performatives.

For example, a speaker who utters

(8) I'll come over at the weekend to help with the painting

attempts to perform a commissive speech act. Searle (1969: 63) proposes a number of mandatory conditions which must be met before the speech act can be counted as successful.

The rules of a felicitous promise.

Proposition¹³

Preparatory Condition

Sincerity Condition

Essential Condition

A is act. S is speaker. H is hearer.

Future act A of S.

H prefers S's doing A to S's not doing A, and S believes H prefers S's doing A to S's not doing A. It is not obvious to H that S will do A in the normal course of events.

S intends to do A.

The utterance counts as an undertaking of an obligation on S to do A.

Austin and Searle view communication as speakers engaging in rule governed behaviour in pursuit of their own purposes. A slightly different view is proposed by Leech (1983) who, like Austin and Searle, argues that language is a means through which speakers achieve their ends. Leech argues, however, that the illocutionary force of an utterance is not governed by conventional rules but rather by implicatures generated by the message which best satisfy the speaker's communicative needs (ibid. 36–40).

Leech's analysis has the advantage of being able to incorporate *indirect speech acts* such as *It's cold in here* in the same category (directives) as direct speech acts, e.g. *Switch on the heater*. Searle's rule governed analysis requires that the utterance *It's cold in here* instantiate two separate speech acts: with the indirect speech act functioning as a means of performing the direct speech act (Leech ibid. 39). Leech, however, regards all speech acts as an

indirect means of achieving the speaker’s ends. Here the speaker desires warmth; the direct means of achieving this end is to turn on the heater him/herself. As the indirect and direct speech acts are both indirect means of achieving warmth they generate the same contextualized implicature that *the speaker wishes the heater turned on*. The indirect speech act, *It’s cold in here*, does not instantiate two separate speech acts: one of which is the indirect means of performing the other. Like Searle, Leech does not propose a mechanism explaining how implicatures are generated¹⁴ but again the notion of cognitive environments fills the gap.

In any case, regardless of whether the rule governed approach of Austin/ Searle or the functional approach of Leech is preferred, both approaches provide strong support for Brazil’s premise that language is purposeful behaviour which speakers use in the management of their daily affairs.

3.3.1 The role of intonation in signalling the illocutionary force of discourse

Searle has not attempted to investigate links between intonation and illocutionary force although other scholars have. Gunter (1972) describes intonation as signalling the relevance of an utterance to its context. Example (9) from Gunter (1972: 205) demonstrates:

(9) Context:	<i>John drank tea</i> ¹⁵		
Response:	3 TEA 1↓ (Fall)	Relevance	Recapitulation
	1 TEA 1↑ (Low-rise)	Relevance	Unknown
	3 WINE 1↓ (Fall)	Relevance	Contradiction
	1 WINE 1↑ (Low-rise)	Relevance	Unknown

As Gunter only provides constructed data, comprising sentence minimum pairs, it is difficult to evaluate his claims, but his point that intonation signals how the speaker intends the hearer to perceive the utterance is well taken.

Couper-Kuhlen (1986: 164) labels the view that a given intonation only occurs with a particular illocution ‘the strong version of the one-to-one hypothesis’ and the view that a given intonation marking is possible when a particular illocution is present regardless of whether the intonation is present elsewhere or not ‘the weak version of the one-to-one hypothesis’. Liberman and Sag (1974: 419) provide the following example of the *contradiction contour* which exemplifies the strong version of the one-to-one hypothesis.

- (10) Elephant tiasis isn’t in/curable

Phonetically, the contradiction contour is a high fall from *elephantiasis* followed by a low rise from *incurable* (Ladd 1980: 150 and Gussenhoven (1983: 255). Liberman and Sag's claim is that the intonation contour of a high fall followed by a low rise always realizes a contradiction. Brazil (1985: 379), however, points out that:

An assertion like 'Elephantiasis isn't incurable', if placed in a discourse at a point where it denies the truth of some preceding assertion or implication will be 'contradictory' whatever contour is chosen: the value of the intonation has to be seen as some socially motivated modification of the act of contradiction.

In other words, the utterance *Elephantiasis isn't incurable* when intoned without the contradiction contour may realize a contradiction depending on the context in which it is uttered: see example (9) from Gunter (1972) where a fall accompanies a contradiction. The strong version of the one-to-one hypothesis is untenable. This finding is in accord with Gussenhoven's (1983: 194) observation that it is not generally believed that one-to-one correspondences exist between linguistic forms, including intonation, and speech acts.

Couper-Kuhlen (1986: 165) demonstrates that the weaker version is equally untenable. She provides the following examples¹⁶ and shows that utterances with explicit performative marking 'do not appear to differ systematically in terms of intonational shape'.

(11)	<i>Utterance</i>	<i>Speech Act</i>
	I invite you to our \city	Commissive
	I apologise for the \mistake	Expressive
	I request the honour of your \presence	Directive
	I ask whether that is \right	Assertive

She notes that, even though each utterance realizes a different and distinct illocutionary force, they can all naturally take falling intonation. Any potential role intonation may have in marking the illocutionary force of utterances with explicit performative marking is neutralized by the explicit performative verbs.

Sag and Liberman (1975: 488 and 494) argue that intonation can disambiguate the illocutionary force of utterances which do not contain explicit performatives. To illustrate they provide example (12),

(12) Why don't you move to California

and argue that if (12) has a fall on *California* it is a literal question but if it has a rise on *California* it is a suggestion.¹⁷ While this may be true, it is clearly not a generally applicable rule, e.g.

- (13) Why don't you sod off
- (14) Why don't you grow up

It seems highly unlikely, regardless of whether the intonation rises or falls, that a hearer could interpret the illocutionary force of either (13) and (14) as a literal question except in highly unusual communicative situations. It seems that intonation does not disambiguate the illocutionary force of utterances with or without explicit performatives.

Couper-Kuhlen (1986: 169) states that the role of intonation in disambiguating questions from statements 'has long been undisputed'. Yet she, herself, admits the speech act category of question is controversial and not easily defined. Interrogative mood utterances have the potential to realize varying speech acts, e.g.

- | | | |
|------|---|-------------|
| (15) | Can you pass the salt? | A request |
| (16) | Have you ever heard of anyone as beautiful as me? | A boast |
| (17) | Can you leave that bag in the closet? | A command. |
| (18) | What time do you call this then? | A reprimand |
| (19) | Why does Jane always disappear when we get busy? | A complaint |

Yet she (ibid. 169) is surely correct to state that even though the speech act category of questions appears dubious, questioning is something people do with words and so should on intuitive grounds alone qualify as a speech act. Searle (1969: 66) sets out the conditions which, he claims, govern the uttering of the speech act of questioning.

(20) *The rules of a felicitous question*

- | | |
|------------------------|---|
| Proposition | Any. |
| Preparatory conditions | S does not know the answer i.e. does not know if the proposition is true or does not know the answer needed to complete the proposition. It is not obvious to both S and H that H will provide the information at the time without being asked. |

Sincerity condition	S wants this information.
Essential condition	Counts as an attempt to elicit this information from H.

Searle's conditions state that a question is an attempt to elicit information which the speaker does not have but believes that the hearer has. This definition, as Couper-Kuhlen (1986: 170) points out, is insufficient. It fails to address the issue that the condition *S does not know the answer* holds with varying degrees of certainty. Questions where the speaker suspects or even knows the answer are *conductive*; all other questions are *non-conductive*. Speakers who ask both conducive and non-conductive questions appear to want the information which they attempt to elicit: they fulfil the sincerity and essential conditions. Searle (1969: 65) argues that the performance of any illocutionary act implies the satisfaction of the preparatory conditions. In other words, the production of a conducive question also satisfies the preparatory conditions and so realizes the illocutionary act of questioning and not an independent illocutionary act of checking.

Brown, Currie and Kenworthy (1980) investigated the intonation of conducive and non-conductive questions in Edinburgh English.¹⁸ They suggest that there appears to be a consistent correlation between the terminal tone and the conduciveness of the question and state:

The terminals appear to relate in a consistent way to the conduciveness of the question. Where the questions appear to be non-conductive, as in some polar questions, all WH-questions and some echo questions, the terminal is either A (rise to high) or B (fall to mid) . . . Conducive questions, all declarative questions and some polar questions are regularly asked on a fall-to-low, C. (ibid. 187)

However, counter-evidence exists; for example Halliday (1970: 27) argues that a polar question with falling tone has the potential to realize a strong question indicating forcefulness or impatience but not apparently conduciveness. Quirk, Greenbaum, Leech and Svartvik (1972: 392) report the existence of declarative polar questions (conductive questions) occurring with rising tone and non-conductive Wh-questions with falling tone printed below as examples (21) and (22) respectively.

- (21) you've got the ex/plosive
- (22) i wonder what \time it is

Tench (1996: 39) states that tag questions with checking tags have falling intonation when the speaker is fairly certain of the answer. If the checking tag is rising the speaker is less certain of the answer. Quirk, Greenbaum, Leech and Svartvik (1985: 811) argue that in tag questions it is important to separate two factors: *an assumption* expressed by the statement and *an expectation* expressed by the tag. They provide the following example:

(23)	Statement	Tag	Assumption	Expectation
(a)	He likes his \job	/doesn't he	Positive	Neutral
(b)	He doesn't like his \job	/does he	Negative	Neutral
(c)	He likes his \job	\doesn't he	Positive	Positive
(d)	He doesn't like his \job	\does he	Negative	Negative

The rising tags in (a) and (b) ask if the preceding statement is correct, i.e. they are non-conductive. The falling tag in sentences (c) and (d) invite the hearer's verification, i.e. they are conductive. However, Tench (1996: 38) states that when the tag in copy tags has its own tone unit it must be rising e.g.

(24) He likes his \job /does he

Quirk and Greenbaum (1973: 195) and Hudson (1975: 25), who classify *copy tag questions* as conductive, agree that the tag rises. Thus, the literature on checking tags supports the views of Brown et al. but the literature on copy tags does not.

The short review of the literature presented above shows that there is no agreement about the illocutionary force of questions accompanied with either falling or rising tone. Couper-Kuhlen's observation (1986: 172) that it appears unlikely that any direct links will be established between intonation and illocutionary force, both for questions and for other types of speech acts, appears well founded. To conclude, this section has shown the power and the usefulness of theories which describe speech, whether rule governed or not, as purposeful action; Brazil's premise that speech is purposeful is well-founded. It has, however, also shown that no firm evidence exists demonstrating a link between intonation and illocutionary force.

3.4 Speech is Interactive

It is a truism that when people converse they interact. Brazil (1995: 29), however, defines the term *interaction* in a more restricted manner as

'speakers characteristically pursu[ing] their purposes with respect to a second party'. They shape their message depending on the state of convergence which they assume exists between them and the audience (Brazil 1997: 71). Theories which rest on the mutuality of knowledge/belief and the ability of individuals to peer inside others' minds are problematic for the reasons outlined earlier in the chapter. Speakers rely, instead, on the state of their own cognitive environments to judge the assumed state of convergence between them and their audiences.

Brazil's view of language is quite different from that labelled by Grosz and Sidner (1990: 421) as *the master-slave assumption*. They criticize what, they claim, is the prevalent view among scholars which is that the speaker (the master) produces utterances and the hearer (the slave) attempts to infer the meaning. They, like Brazil, argue that both the speaker and the hearer are jointly involved in the construction of the discourse regardless of the balance of their actual verbal contributions (ibid. 427). Accordingly, in this book the terms speaker and hearer refer to discourse participants who are temporarily occupying the role of either speaker or hearer, but whose role in the discourse is to be both speaker and hearer.

The following paragraphs compare and contrast Brazil's theory that tone selection signals speakers' projected assumptions of the state of speaker/hearer convergence with two theories, Pierrehumbert and Hirschberg (1990), and Gussenhoven (1983 and 2004), which examine the relationship between tone choice and the projection of speaker's expectations in discourse. These theories have been chosen for two reasons: the authors come from a different tradition than Brazil and they have been widely cited in the literature.

3.4.1 Intonation and the signalling of speaker expectancies in discourse

An extremely influential paper which attempts to link tone to how speakers label their utterances is Pierrehumbert and Hirschberg (1990) – hereinafter P&H. They segment speech into *intonational phrases* (IP) which in turn contain one or more *intermediate phrases*. A well formed intermediate phrase contains one or more pitch accents plus a high or low tone known as the *phrase accent* which marks the end of the intermediate phrase. P&H's taxonomy allows for six pitch accents: high tone (H) and low tone (L) and four other pitch accents formed from a combination of H and L tones all of which mark the lexical items they are associated with as prominent. Pitch accents are notated by a star *. The end of the IP is marked with an additional H or L tone known as the *boundary tone* which falls exactly at the

IP boundary and is notated by %. Phrase accents are not recorded with any special diacritic. To illustrate P&H’s notation system their notation in (25) appears similar to the Discourse Intonation notation in (26):

- (25) That’s a remarkably clever suggestion
H* H* L L%

- (26) // p that’s a reMARKably clever suggestion //

In the utterance *that’s a remarkably clever suggestion*, there are two prominent syllables *mar* and *ge*, the tonic syllable. The pitch movement following *ge* and continuing until the end of the tone unit falls. What Brazil notates as tone, P&H notate as a combination of phrase accent and boundary tone (Pierrehumbert 1980 and P&H 1990).¹⁹ This system allows for four possibilities which are schematized below in Table 3.3.

As the end of the last intermediate phrase in an IP must coincide with the boundary tone, the separate informational value realized by phrase accents must be studied when the phrase accent occurs in intermediate phrases other than the final one in the IP. P&H (1990: 287 and 304) provide three examples.

- (27) The train leaves at seven or nine twenty-five
H* H* H* H H* H* L L%

Table 3.3 Correspondences between Pierrehumbert (1980) and nuclear tones

Pierrehumbert 1980	Tone movement
*LL%	Fall or rise-fall
*LH%	Rise or fall-rise
*HH%	Rise or fall-rise
*HL%	Stylized rise or stylized fall-rise [^]

The * indicates the tone. P&H’s taxonomy of tones consists of H*, L*, HL*, H*L, L*H and LH*. I have not included the tone selections in the chart because phrase accents and boundary tones realize the same independent communicative value regardless of which tone they follow.

[^] The description of *HL% as Stylized Rise or Stylized Fall is from Ladd (1996: 82). Wennerstrom (2001a: 41) describes *HL% as ‘a plateau pitch boundary’ which she expressly equates with level tone. P&H (1990: 280) state ‘The sequence HL% comes out as a high plateau without any drop at the end’.

- (28) George ate chicken soup and got sick
H* H* H* H H* H* L L%
- (29) George ate chicken soup and got sick
H* H* H* L H* H* L L%

Example (27) is an IP which consists of a two intermediate phrases. P&H state that the presence of the H phrase accent signals that the first intermediate phrase is to be interpreted as a unit with the following phrase (*ibid.* 287). Examples (28) and (29) differ only in the choice of phrase accent. P&H interpret the H phrase accent in (28) as signalling the causal link between George's eating of the chicken soup and his subsequent illness, while the L phrase accent in (29) fails to 'intonationally reinforce' the link between the consumption of the soup and the subsequent sickness. (29) represents two unrelated pieces of information: the fact that George *got sick* is not projected as being caused by the consumption of the chicken soup (*ibid.* 304). In other words, H phrase accents signal that the information conveyed within an intermediate phrase is incomplete and is dependent on information contained in a following intermediate phrase.

It is not clear whether tone units correspond more closely to intermediate phrases or IPs. Chafe (1994: 57) argues that intermediate phrases correspond to the tone units proposed by various British linguists, while Chun (2002: 38), however, states that an IP is comparable to a tone unit in Crystal (1969). Others such as Gussenhoven (2004: 126) and Grabe (2001) mark only one boundary tone and so do without the intermediate phrase. Boundary tones have scope over the entire IP. P&H argue that H% boundary tones indicate that the speaker intends the hearer to interpret IPs in the context of further following IPs. The speaker creates an expectancy that there is more to come while the presence of 'L% boundary tone(s) do[. . .] not convey such directionality' (p. 305). To illustrate, P&H provide examples (30) and (31).

- (30) (a) My new car manual is almost unreadable
L L%
- [(b) It's quite annoying
L H%
- (c) I spent two hours figuring out how to use the jack]
L L%

and *variable* which is:

(the) semantic material to which speakers apply one of a number of manipulations with respect to the Background. (ibid. 22)

According to Gussenhoven's theory, speakers do three things with the variable. They add the variable to the background (*V-addition*), they select a variable from the background (*V-selection*), or they leave it up to the hearer to decide whether the variable has been added to or selected from the background (*V-relevance testing*).

Tone choice labels the speaker's contribution as V-addition, V-selection or V-relevance testing. Gussenhoven proposes an intonational lexicon comprising three primary tones: the fall, the fall-rise and the rise. To exemplify his taxonomy he presents three examples:

- (32) The ↘HOUSE is on fire
- (33) The ↘↗HOUSE is on fire
- (34) The ↗HOUSE is on fire

Gussenhoven claims (32) labels the speaker's contribution as intended to update the hearer's background; the speaker adds a variable to the background and tells the hearer that *the house is on fire*. (33) exemplifies selection of a variable from the background and the speaker's meaning is paraphrased by Gussenhoven as 'I want you to take note of the fact that the house is on fire is part of our Background' (ibid 19). Gussenhoven (2004: 299; 1983: 20 and 202) states that V-addition and V-selection correspond to Brazil's proclaiming and referring tones respectively.²¹

Example (34), according to Gussenhoven, labels the speaker's contribution as leaving it up to the hearer to determine if the utterance is already part of the background or if it is to be added to the background. Rising tone signals that the speaker is unsure whether or not the hearer is aware that *the house was on fire*. He calls this V-relevance testing.²² This claim is clearly distinct from Brazil who groups the rise and the fall-rise as referring tones. It appears that the most likely occurrence of (34) is as an echo question. Consider:

- (35) A is B's son. He is also a pyromaniac. A meets B in town and says:
 A: // ↘the HOUSE is on fire //
 B: // ↗the HOUSE is on fire //

According to Gussenhoven's theory, *A* adds the fact that *the house is on fire* to *B*'s background. Whereupon *B* responds by signalling that he is leaving it up to *A* to determine whether the variable *the house is on fire* is part of the shared background. The most obvious local meaning signalled by *B*'s reply is one of incredulity. *B* requests *A* to determine if '*the house is on fire*' is part of their shared background? Brazil (1997: 84) states that the rise (r+) tone but not the fall-rise (r) realizes an extra communicative value.²³ Regardless of whether the speaker employs r or r+ tone they project an assumption of speaker/hearer convergence but selection of r+ tone also signals a projection of dominance by the speaker. Brazil's theory explains *B*'s selection of rising tone in (34) as referring back to the pyromaniac's announcement and asserting dominance. The local meaning is that of an echo which demands clarification, itself a manifestation of the temporary assumption of dominance. It can be paraphrased as *The house is on fire is part of our shared background. Tell me more*. Without extensive corpus study it is impossible to choose between Brazil's and Gussenhoven's claims. Yet for present purposes, namely evaluating the premises Brazil's grammar of increments rests on, all that is important is that Gussenhoven's theory supports Brazil's assertion that only the fall unambiguously signals an act of telling, rises and fall-rises do not.

To conclude, there is support within the literature for the premise that speakers frame their utterances with respect to the assumed state of speaker/hearer convergence. The intonational theories discussed above, while by no means identical to Brazil's theory, provide support for his view that only end-falling intonation realizes an act of telling. However, it will be shown both in the following section and in Chapter 5 that Brazil's view of the meaning potential produced by tone selection is too restricted to fully account for the meaning realized by increments.

3.4.2 The relationship between level tone and used speech

The term 'used language' necessarily implies the existence of what can be labelled *unused language* that is, the production of language acts which are neutral in speakers' pursuit of the individual daily purposes necessary for the management of human affairs. Chomsky (1975: 61) recounts a personal anecdote which, he claims, demonstrates that speakers can use language without an intention to communicate. He describes the curious experience of making a speech against the Vietnam War to a group of soldiers who were advancing in full combat gear, rifles in hand to clear the area where he was speaking. He states that he meant what he said and that

his statements had their strict and literal meaning but as he assumed he had no audience he was not engaging in a communicative act. In other words, he was apparently producing lexical items without making any assumptions as to the state of speaker/hearer convergence. Yet, had Chomsky's speech been surreptitiously recorded and replayed at a later date to a sympathetic audience, regardless of his initial non-communicative intention, it seems likely that the audience would have perceived his speech as a communicative act.

Pickering (2001) describes an almost opposite situation: where non-native speaking international teaching assistants (ITAs) at a North American University, who intended to communicate with their audiences, produced language which failed to label correctly their assumptions of the state of speaker/hearer convergence. It seems intuitively odd to suggest that communication, no matter how degraded, failed to occur. Both Chomsky and Pickering's ITAs produced strings of lexical elements which a grammarian could encode according to the chaining rules. However, intonationally Pickering's ITAs, and perhaps Chomsky too, appear to have produced tone movements which failed to match the speakers' assumptions of the state of convergence between the speakers and their audiences.

Brazil (1997: 133) introduces the term *oblique orientation* and defines it as speakers presenting their utterances as specimens of language, i.e. speakers do not attempt to label their message as more than an uninterpreted entity. They opt out of evaluating the state of speaker/hearer convergence prior to producing their utterance. Brazil suggests two reasons why speakers produce oblique utterances, namely: production of formulaic or ritualistic language (ibid. 137); and difficulties in utterance planning (ibid. 139). Speakers may be forced to focus their attention on assembling their utterance and so produce instances of pause fillers and short tone units with level tone,²⁴ or they may read words aloud which they fail to understand, or they may be unconcerned with the potential communicative implications of their words (Brazil 1992: 213). Brazil (1997: 135) notes that oblique utterances are completed by proclaiming tones which operate not only in used language where they tell but also in oblique language where they signal a potential end.

Cauldwell and Schourup (1988: 424), in their investigation of Yeats's readings of his own poetry, report that he chose a preponderance of level tones in order to label his readings as specimens of language which, they claim, resulted in the highlighting of the aesthetics of his poems. Cauldwell (1999: 44) asserts that Yeats foregrounded the poetic at the expense of the communicative properties of his poems. Tench (1997: 10), similarly, reports

that he found 'an overwhelming number of level tones (17 out of 19)' in Dylan Thomas's authorial reading of his *Prologue*; a finding which he claims 'clearly indicate[s] Thomas's perception of the level tone's dramatic effect'.

Tench (1990: 502) found that speakers reciting the Lord's Prayer in unison at a non-conformist service broadcast by BBC Radio Wales selected level tone on all tone units except the final one. Crystal (1975: 102) in his discussion of prayer in unison likewise claims that:

The introduction of variation in nuclear tone-type (e.g. rising, falling-rising tunes) or in pitch-range (e.g. high falling or low falling) is optional, and usually not introduced.

He, also, notes that the final word of the prayer (*amen*) 'is given a marked drop in pitch'. It appears that falling tone may signal the completion of a piece of language which the speaker is unable or unwilling to assess as either new or part of the common ground. Crystal further maintains that in individual liturgical prayer level tones are more frequent than in other modalities of speech. He claims, however, that speakers engaged in bible readings or in making sermons tend to select tones analogous to those found in conversation. It is tempting to explain the preponderance of level tones found in prayer in unison and in recited individual liturgical prayer as instances of scripted/learned stereotypical language. Yet Tench's (1990: 505–6) finding that public unscripted prayer contains a preponderance of level tones indicates that a different explanation is required. He argues that: 'Linguistic communication with God does not anticipate a linguistic response' (ibid. 513).²⁵

Ladd (1980: chapter 8) and Gussenhoven (1983: 221) discuss the intonation of *calling contours*²⁶ which are realized phonetically by a step down from one fairly level pitch to another (ibid. 169). Ladd argues that the communicative significance of the calling contour is that speakers label their speech as containing a predictable or stereotypical element (1980: 173). Similarly, Gibbon (1976: 279–80) describes calling contours as low in information value. Ladd (1980: 185) also describes stylized rises²⁷ as signalling less information and more predictability. Gussenhoven (1983: 222) argues that the modification *stylization* labels the content of an utterance as a matter of everyday occurrence or routineness.

Gussenhoven (ibid. chapter 7) conducted a small experiment which attempted to explore the semantic relationships between tones. He hypothesized that his subjects would find the semantic distance between the rise

and the level tone to be closer than the semantic distance between either the level tone and the fall, or the fall and the rise. However, contrary to his hypothesis, his subjects considered that the level tone was as semantically distant from the rise as it was from the fall, and that the semantic distance between the fall and the rise was as great as the semantic distance between the level tone and the rise. These findings suggest that Gussenhoven's subjects treated level tone as a separate tone and not as a stylized variant of the rise.

Tench (1997 and 2003) argues that a further and perhaps recent communicative value realized by level tone is that of *routine listing* and states that:

The pattern is often used in arguments when the speaker wants to give the impression that they expect any self-respecting interlocutor to fully agree with their statement without raising any objection. (2003: 229)

He (1997: 17) provides the example of a doctor from East Anglia who, on the Radio 4 *Today* news programme, said:

- (36) some of the children are so \/ILL // that they can't go to
— SCHOOL // they can't even get up and — WALK // . . .

The doctor presents as self-evident the information *that the children can't go to school, that they can't even get up and walk* and uses it to substantiate his argument. According to Tench, such instances of level tone have the potential to operate as part of used language; speakers in pursuit of their individual communicative goals package their message as a non-controversial routine or list which they expect their hearers to agree with.

Before attempting to suggest how level tone may be encoded into a grammar of used language it is worth summing up the above findings. There is widespread agreement that level tone labels utterances as routine, detached from the context, and downplays the speaker's involvement with the message. Pickering (2001: 238) employs the term *tonal composition* to refer to the combination of rising, falling and level tones in any discourse. According to Brazil (1997: 135) a combination of predominantly end-falling and end-rising tones labels the discourse as direct while a combination of end-falling and level tones labels the discourse as oblique. (37) fulfils Brazil's intonational and grammatical criteria: the speaker produced a falling tone and his words completed a grammatical chain but he is not apparently producing used language and so (37) is considered an *oblique increment*.

- (37) // — the SQUARE of the hyPOTenuse // — of a RIGHTangled
 d n P d n P d e

TRIangle//

N

— is equal to the SUM of the SQUARES // \ on the Other two

 V E P d N P d N P d e

SIDES //

N #²⁸

(Brazil 1997: 138)

It seems that (37) realizes the communicative value of introducing an increment into the discourse which the speaker is unable or unwilling to label as an act of telling. In (37) this inability or unwillingness to tell routinizes the teacher's remark. The teacher seemingly presents his information as so obviously true that his hearers will fully agree with the statement without raising any objection. It appears that some instances of level tone such as (37) can be notated in the grammar as oblique increments; however, such a solution does not appear sufficient to explain utterances like (36) which have a different tonal composition. The analysis in Chapter 5 explores how to encode utterances like (36) within increments.

3.4.3 Summary

To conclude, it has been demonstrated that there is support in the literature for the view that speakers form and label their utterances based upon their assumptions of the state of speaker/hearer shared convergence. Two influential theories of the discoursal function of intonation were compared and contrasted with Brazil (1997) and it was found that both theories supported Brazil's central claim that only end-falling tones have the potential to label an utterance as a potential act of telling. Not all instances of fluent speech can be categorized as used. Exceptions include ritual language, public prayer, read aloud poetry and calling contours. It appears that (recently) speakers in spontaneous discourse may have begun to produce level tone in pursuance of their individual communicative goals and it is suggested that such instances be classified as part of used language.

3.5 Speech is Cooperative

The view that speech is a cooperative happening is most closely associated with the work of Grice who argues (1975: 45–6) that successful speakers

cooperate with hearers and in so doing relieve hearers of some processing costs. He puts forward the *cooperative principle* which is broken down into four maxims.

The Cooperative Principle

QUANTITY: Give the right amount of information: i.e.

1. Make your contribution as informative as is required.
2. Do not make your contribution more informative than is required.

QUALITY: Try to make your contribution one that is true: i.e.

1. Do not say what you believe to be false
2. Do not say that for which you lack adequate evidence.

RELATION: Be relevant

MANNER: Be perspicacious; i.e.

1. Avoid obscurity of expression.
2. Avoid ambiguity.
3. Be brief (avoid unnecessary prolixity)
4. Be orderly

Taken together the four maxims emphasize the importance of the speaker reducing as much as possible the hearer's processing costs. One of the ways a speaker can do this, as implied by maxim 1, is by signalling the news value of the utterance. Leech (1983: 34–5) states that speakers aim to create *reflexive intentions* (intentions whose fulfilment is their recognition by the intended recipient). Reflexive intentions grounded on mutuality, as discussed earlier, appear unfeasible, (e.g. Bach and Harnish 1979: 15) but those based upon individuals' appreciations of their own cognitive environments appear sound. An individual's cognitive environment is the knowledge stored in the person's long-term memory plus the knowledge which the person can glean from the physical environment; and any inferences the person, based on his/her knowledge, is capable of making. Sperber and Wilson (1995: 46), hereinafter S&W, argue that people communicate with the intention of altering either their own cognitive environment or that of their hearers. They propose a principle of relevance which they claim speakers employ to enable them to communicate effectively.

Principle of Relevance

- (a) The ostensive stimulus is relevant enough for it to be worth the addressee's effort to process it
- (b) The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences. (S&W 1995: 270)

Unless a speaker's words hold sufficient interest for the hearer, communication fails to take place. The hearer is entitled to assume that the speaker's message is the most relevant one that could have been produced in the context in which the interlocutors operate. S&W (*ibid.* 46–50) argue that 'human beings are efficient processing devices' and, as the concept of efficiency is meaningless unless defined in terms of a goal, the general goal of human cognitive efficiency, for S&W, is to add as much knowledge of the world to a person's existing cognitive environment as is realistically feasible given the available resources. Speech is an ostensive stimulus so a hearer knows that the speaker is attempting to alter the existing state of speaker/hearer convergence through the production of a purposeful ostensive stimulus which functions to either tell or ask.

A problem in interpreting S&W's theory is that it is difficult to decide how they delimit utterances. It appears that, for them, an utterance must contain one and only one logical presupposition or entailment (*ibid.* 202).²⁹ Intonation is not included in their theory though they state that the tonic accent placement signals the set of available presuppositions (*ibid.* 209). An example from Wilson and Sperber (1979: 312) may explain.

(38) You've eaten all my APples

Possible Entailments of example (38)

- (a) **You've eaten all my apples**
- (b) You've eaten of someone's apples
- (c) **You've eaten all of something**
- (d) **You've eaten something**
- (e) **You've done something**
- (f) You've done something to all my apples
- (g) You've eaten some quantity of my apples
- (h) **You've eaten all of something of mine**
- (i) Someone's eaten all my apples
- (j) **Something's happened**

The accenting of the final lexical item means that the speaker has created a situation where six of the possible logical entailments (marked in bold) are relevant to the hearer. The speaker first examines the strongest entailment which is (a) and if this is relevant stops there. If it is not relevant the hearer continues processing in the order (h), (c), (d), (e) and (j) stopping as soon as the hearer finds an entailment that is relevant.

Bolinger (1989: 353), while equating his concept of interest with S&W's principle of relevance, points out a number of weaknesses with the theory,

notably the failure to account for more than one accent per utterance.³⁰ S&W's lack of treatment of prosody conflicts with the idea that hearers form anticipatory hypotheses. S&W's claim that only the final accented syllable serves to signal logical entailments means that the hearer has to wait until the utterance is complete before being able to make a judgement as to which entailment is relevant. Levinson (2000: 5) notes that the preponderance of evidence available from the psycholinguistic literature indicates that 'hypotheses about meaning are entertained incrementally – as the words come in, as it were', and concludes that S&W's concept of presuppositions is not psycholinguistically plausible.

A further problem with S&W's theory is that as they do not study corpus data, many of their example sentences appear too long to be normally spoken in one tone unit. An example with nuclear accent on *France* is '*The exhibition was visited by the king of FRANCE*' (ibid. 214). In discourse a speaker has the option to utter it as two tone units, e.g.

(39) // the exhiBItion was ViSited // by the KING of FRANCE //

and so it is not at all clear what presupposition a hearer should or could infer. Bolinger (1989: 357) argues for the removal of what he labels 'the dead hand of transformational prosody' and the recognition that the key factor guiding S&W's Principle of Relevance is speakers' assumptions of the state of convergence existing between themselves and their hearers. Inferences and entailments, according to Bollinger, are generated by the occurrence of words in context. Hearers are not required to wait until the final accent to form logical entailments. Pre-nuclear accents help hearers form anticipatory incremental hypotheses which enable them to understand speakers' messages. If one follows Bolinger and removes 'the dead hand of transformational prosody', S&W's principle of relevance is a valuable and incisive method of explicating discursual meaning.

A final problem with S&W's theory was alluded to in Section 2 of this chapter. They do not overtly take into account the interactive tension inherent between the language and social systems which both shapes the social systems as well as concomitantly forcing the speaker to adopt a register appropriate to the discourse setting, the speaker's communicative goals; and the relative statuses of the interlocutors.³¹ However, S&W's theory states that a communicator's cognitive environment includes all the facts that are manifest to him/her, plus any resulting inferences arising from these facts (1995: 38–9). Facts that are manifest to individuals include those which arise from their perceptual abilities, their previous experiences and

memories of deriving information from the environment. Individuals' previous experiences and memories are shaped by their community membership; these experiences in turn shape their perspectives of the society they operate in. This indicates that even though the social aspect of S&W's theory is sadly neglected, the theory itself is compatible with the view that language not only represents reality but also construes it.

Despite the problems raised with S&W's description of the communicative process, their principle of relevance along with Grice's pioneering work demonstrates clearly the cooperative nature of speech and provides a theoretical framework which allows discourse analysts to explore speech as a purposeful cooperative happening. To conclude, the premises that used language is purposeful and cooperative are both well supported.

3.6 Existential Values

Brazil (1995: 35) argues that speakers select lexical items³² with communicative values which are negotiated by the participants as the discourse unfolds. The lexical item selected by the speaker has a communicative value equal to the sum of the values excluded by the lexical items it opposes in a paradigmatic *sense set*. An example taken from Levinson (2000: 99) demonstrates:

(40) John can climb hills.

Levinson argues that *can* opposes *cannot* and so instantiates the meaning *not cannot*, similarly *hills* opposes *mountains* and so may instantiate the meaning *not mountains* and according to Levinson, results in an implicature that *John cannot climb mountains*.

The view described above is radically different from the intuitive view that lexical items refer to referents in the real world. When speakers utter the word *tree* they apparently refer to a physical object or to a member of a natural class of objects. Yet there are problems with this common sense view (Carter 1987: 15–16). It is possible to refer to a physical object by employing a periphrastic lexical item such as *whatsisname* which has no unique reference. Eco (2000: 289–90) shows that it is possible to coin a lexical item with no referent which refers to a non-existent object.³³ Furthermore more than one lexical item may refer to a unique referent (Frege 1999). While *the evening star* is *the morning star* it hardly makes sense to argue that *the evening star* and *the morning star* realize an identical

or synonymous communicative value. Putnam (1999: 236) demonstrates that speakers may 'know' lexical items such as *elm* and *beech* but yet be unable to locate or distinguish their referents. Hasan (1996: 100) states:

The concept of reference has been a problematic one in semantics. The interpretation of the term 'reference' as an onomastic relation to existents is a limiting one, which arbitrarily cuts the sign system (lexis) into two distinct areas. There are signs such as *tree* 'referring' to TREE, a concrete object, a member of a class 'out there' and there are signs such as *gather*, *collect* which lack referents.

Carter (1987: 15) agrees and states that there are 'several words in a language which, when taken singly, have no obvious referents'. The communicative value of all lexical items cannot be measured solely by reference to the outside world; the sense relations contracted between lexical items as part of the lexical system must also be considered. Carter (ibid. 16–18) describes an attempt to define lexical items by *componential analysis* which presupposes a stable universal world of concepts where the structure of reality is semanticized by lexical items. For example, *woman* is defined as + HUMAN + ADULT + FEMALE, while *girl* is defined as + HUMAN – ADULT + FEMALE.

By recognizing that the meaning of lexical items can be atomized, componential analysis acknowledges that lexical relations play a significant role in measuring their communicative values. However, while a step in the right direction, componential analysis is clearly not the full answer. Carter (ibid. 17–18) points out some of the numerous problems with componential analysis notably: the lack of limitation of the number of potential features associated with a lexical item; not all lexical contrasts are binary, e.g. *tall* and *short* which do not realize absolute values but rather stand at different ends of a cline; and lexical items which realize different communicative values in different contexts, e.g.

(41) I am meeting my girl for a drink tonight

In (41) *girl* does not have the feature – ADULT and must be differentiated from the non-selected *woman* by some other feature.³⁴

Carter (ibid. 18–22) describes strong evidence that paradigmatic lexical relations play an important role in defining the communicative value of individual lexical items. He (ibid. 22) reports that subjects in word association experiments defined the communicative value of individual lexical

items in terms of synonyms, antonyms, and hyponyms. He argues that individual lexical items form into lexical sets which realize their communicative values through their opposition with other lexical items in the same set, e.g. white is white because it is not red or indeed any other colour. Carter (ibid. 33–42), Cruse (1986: 146), Lakoff (1987: 46–7) and Lyons (1977: 305–11)³⁵ argue that, within each lexical set, one lexical item is the core lexical item. For example, Lakoff provides the following example:

(42)	Superordinate	Animal	Furniture
	Basic Level	Dog	Chair
	Subordinate	Retriever	Rocker

Lakoff and Carter argue that in neutral communicative situations speakers select the core lexical item. It is not clear, however, what a neutral communicative situation refers to. It may mean that in a preponderance (or bare majority) of communicative situations speakers tend to choose core lexical items.³⁶ For example (43) and (45) appear more unmarked than (44) and (46).

- (43) I take my **dog** for a walk every morning
- (44) I take my **Alsatian** for a walk every morning
- (45) Beware of the **dog**
- (46) Beware of the **Alsatian**

Yet, in the context of an airport arrivals hall, a customs officer who utters (47) rather than (48) to an incoming passenger with a small dog, seems less neutral.

- (47) All **dogs** arriving in the country must be quarantined
- (48) All **animals** arriving in the country must be quarantined

Hirschberg (1991: 60–1) argues, along Gricean lines, that selection of the superordinate *animals* signals that the speaker is either not in a position to use the more informative core lexical item *dogs* or deems the extra information irrelevant, and so Hirschberg might explain the selection of the superordinate in (47) as signalling that the customs officer deemed the extra information superfluous: a dog is after all an animal. Alternatively, and to my mind more plausibly, Levinson (2000: 31) reinterprets Grice's maxim of quantity as saying: 'What isn't said, isn't'. Hence selection of the core lexical item *dogs* in (47) implicates that dogs and dogs alone are

subject to quarantine. In any case, regardless of which explanation is preferred, use of the core lexical element is more marked than use of the superordinate in the context of examples (47) and (48).

Carter (1987: 39) states that which lexical items operate as core lexical items is always a matter of stylistic choice and is relative to the dynamic and negotiable unfolding context. The following well known examples, from Brown and Yule (1983: 125), demonstrate clearly that while lexical relations play a role in defining lexical items, co-text also plays a role:

(49) I like Sally Binns, she's tall and thin and walks like a crane

(50) I can't stand Sally Binns, she's tall and thin and walks like a crane

The lexical items *tall*, *thin*, and *walks like a crane* clearly realize radically opposed communicative values in (49) and (50).

There is some support in the psycholinguistic literature for the view that the meaning of ambiguous lexical items is, at least in part, disambiguated by contextual effects. Tabossi and Zardon (1993: 359) note that the most frequently occurring content lexical items are potentially ambiguous but yet are rarely so in discourse. They argue that 'context'³⁷ guides the correct interpretation of potentially ambiguous lexical items, and provide an informative summary and critique of the three principle theories outlining the relationship between 'context' and lexical access (ibid. 360–1) summarized in Table 3.4.

All three theories are consistent with the view that 'contextual' effects help to disambiguate lexical meaning. Tabossi and Zardon (ibid. 362), based upon the results of their own experiments, where their subjects heard sentences and subsequently performed a lexical decision task on a target

Table 3.4 The relationship between lexical access and 'context'

-
- | | |
|----|---|
| 1. | <i>The exhaustive theory</i> : which claims that hearers access all the possible meanings of the ambiguous lexical item and then at a later post-access stage choose the meaning appropriate to the 'context'. |
| 2. | <i>The ordered search theory</i> : which claims that the meanings of ambiguous words are serially searched starting with the <i>dominant</i> (most frequent meaning). [*] The search continues until a lexical meaning is found which matches the 'context'. |
| 3. | <i>The 'context' sensitive theory</i> : which claims that lexical access is sensitive to 'contextual' information; only the meaning of the lexical item which matches the 'context' is selected. |
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^{*} A criticism of all the proposed psycholinguistic theories is that while all are dependent on the concept of the *dominant*, none of them has produced an objective methodology in discovering what the most frequent meaning of a lexical item actually is. The dominant appears to be the meaning which, in the introspective judgement of the individual author, is the most frequent.

lexical item, concluded that where the 'context' was biased in favour of the dominant meaning of the lexical item their results favoured the 'context' sensitive theory, but where the 'context' was biased in favour of a subordinate meaning their results supported the exhaustive theory.

Scholars such as Halliday (1994: 15), Hasan (1996: 100), Hunston and Francis (2000), Matthiessen (1995: 5) Sinclair (1991: 104) and, from a different tradition, Jackendoff (1997: 89) argue that lexis and grammar are not distinct. Lexical items are not bricks which are joined together by the mortar of grammar; they are instead an integral part of a unified lexico-grammar. Some support for this view is found in Hasan's (1996: 74–9) exploration of the semantic differences between nine lexical verbs (*gather, collect, accumulate, scatter, divide, distribute, strew, spill* and *share*). She demonstrates quite clearly that it is possible to establish each verb as an independent lexical item which can be distinguished by a sequence of paradigmatic choices in a systems network with major clause as input.

She argues that system networks exploring only the *ideational* metafunction³⁸ may be unable to distinguish all lexical items and suggests that lexical items such as *ask/enquire, buy/purchase, smile/grin, cry/bawl* realize identical sets of paradigmatic choices in the ideational metafunction but realize different sets of choices in systems networks describing the *interpersonal* metafunction. She further speculates that lexical items such as *day/today* and *two/both* can only be distinguished by systems networks exploring the *textual* metafunction (ibid. 99).

This section has demonstrated strong theoretical support for Brazil's theoretical assumption that speakers select lexical items with communicative values which are negotiated by the participants as the discourse unfolds. The value of the lexical items depends both on oppositions existing within the lexical system and the physical and verbal context.

3.7 Conclusion

This chapter has shown that there is theoretical support in the literature for all of Brazil's premises. Such theoretical support is vital because had Brazil's premises proved to have been unreliable there would be little point in attempting to undertake the outward exploration of the grammar proposed in Chapter 1. The division of speech into telling and asking increments was shown to be sound though its reliance on theories predicted on the mutuality of knowledge was shown to be problematic. The key

construct underpinning speaker's lexical selections was shown to be their appreciation of their own cognitive environments.

While support was located for Brazil's view that falling tones are required before an utterance can be said to tell his limitation of the grammar to describing speech which contains only end-falling and end-rising tones appears in need of revision. Instances of speakers selecting level tone in the literature were cited and a category of oblique increment was proposed in order to fully map out utterances where interlocutors have for one reason or another temporarily shifted their attention away from satisfying their communicative needs. In order to fully describe the workings of used language it is important to codify oblique increments because such increments form part of the verbal context. Instances where the speaker was forced to select level tone because of processing difficulties have not yet been discussed. Tench (1997 and 2003) shows that the whole notion of used language as speech accompanied solely by rising and falling tones requires re-examination.

Chapter 4

A Linear Grammar of Speech

This chapter explores the feasibility of encoding speech in a linear rather than a hierarchical grammar. The proposed grammar describes language as unfolding word-like element by word-like element with each element prospecting a further element until an increment is realized and a communicative need satisfied. Before setting out to evaluate if the grammar provides a useful description of speech it is first necessary to demonstrate that a grammar of increments is capable of accurately describing used language and that the elements which Brazil postulated as the slot fillers in his chains are adequate.

Section 1 shows that objections found in the literature, which argue that a linear grammar is incapable of describing the generation and perception of speech, do not necessarily apply to a linear description of the observed reality of speech as a purposeful and cooperative happening. It argues that the coding of used language into a linear grammar is not necessarily incompatible with the coding of the same stretch of speech into a more traditional constituent structure.¹ Section 2 reviews approaches which are compatible with Brazil's proposed grammar and compares and contrasts them with his approach. Section 3 considers the extent, maximum and minimum, of the *slot filling lexical element* in a linear chain. Section 4 considers two features of spoken language – ellipsis and dysfluency – which prima facie contravene the chaining rules set out in Brazil (1995). Section 5 discusses minor inconsistencies in the coding of the final analysis found in Brazil (1995) and attempts to resolve them using the findings from Sections 3 and 4.

4.1 The Feasibility of a Linear Grammar

Hunston and Francis (2000: 244) remind us that the view that language is formed from a constituent structure is 'the conventional view and requires no further justification'. This chapter does not challenge the conventional

view but instead argues that a linear grammar also provides a feasible description of used language. It does this by showing that the objections raised against the feasibility of linear grammars are not applicable to the proposed grammar of used language.

An objection raised against linear grammars is that sentences must be parsed to be understood (Singer 1990: 57). To exemplify the point, he produces the following examples:

- (1) Wild beasts frighten little children
- (2) *Beasts children frighten wild little²

It is clearly correct to argue that because 'sentence' (2) fails to comply with the formal rules of grammar it is grammatically unacceptable. However, an alternative view, that 'sentence' (2) is judged ungrammatical because it fails to fulfil any conceivable communicative purpose, appears equally feasible. According to this view 'sentences' are judged to be grammatical only if they are capable of fulfilling a conceivable communicative purpose in the context in which they were produced. A further argument in favour of the belief that sentences must be parsed in order to understand their meaning, is Chomsky's view that people can recognize some nonsense sentences as grammatical, e.g. (3) or ungrammatical, e.g. (2).

- (3) Colorless green ideas sleep furiously. (Chomsky 1957)

But again, as (3) fails to satisfy any obvious communicative need it is unlikely to be an increment except in marked communicative situations. Accordingly, a grammar of used language does not have to concern itself with explaining how (3) can be identified as an abstract unit which grammarians label a sentence. But if one were forced to explain the apparent grammaticalness of (3) a tentative explanation could go as follows: (3), like the nonsense poetry of Edward Lear,³ could conceivably satisfy a communicative purpose in a particular genre of language such as a children's story. Because of this potential to fulfil an imagined though marginal communicative need, people may judge that (3), unlike (2), has the potential to be grammatical, and therefore under experimental conditions judge it grammatical.

While it is certainly true that a message can be interpreted by parsing its constituent parts this does not necessarily entail that the message cannot be described linearly. Chomsky argues against the feasibility of linear grammars by demonstrating that a finite state grammar⁴ is incapable of generating all the possible sentences of a natural language. He (1975: 30–1) speculates

that a Martian scientist observing a child learning English, who has just learned to produce questions corresponding to the associated declaratives (examples 4 and 5) might hypothesize that:

the child processes the declarative sentence from its first word (i.e. from 'left to right'), continuing until he (sic) reaches the first occurrence of the word 'is' (or others like it: 'may', 'will', etc.); he (sic) then preposes this occurrence of 'is' producing the corresponding question.

- (4) the man **is** tall – **is** the man tall?
- (5) the book **is** on the table – **is** the book on the table?

However, Chomsky notes that such a hypothesis is demonstrably false. Were it correct, the question in (7) and not the question in (6) would be grammatical. The scientist will realize that a more accurate hypothesis is that the child analyses the declarative sentence into phrases and locates the first occurrence of *is* after the initial noun phrase, and then preposes this *is* to form the corresponding question.

- (6) the man who is tall **is** in the room – **is** the man who is tall in the room
- (7)* the man who **is** tall is in the room – **is** the man who tall is in the room

Yet, the demonstration that the transformation of declaratives into polar questions cannot be parsed from left to right has little to say about used language. The derived 'question' in (7) does not have the potential to satisfy any communicative need, and according to our alternate test for grammaticality is ungrammatical. As a result, a grammar of used language does not need to discuss it. But if it had to, an explanation for the ungrammaticalness of the derived 'question' in (7) could go as follows: the N element *man*, which has itself realized an intermediate state, anticipates the following P/N element *in the room*. This anticipation is 'interrupted' by a suspensive subchain. In the subchain the N element *who* anticipates the following V element *is*. Such an anticipation, however, fails to occur as the E element *tall* immediately follows the N element. It is an observed fact of the language that E elements do not occur between N and V elements and so the derived question in (7) cannot represent a legitimate purpose-driven increment.

Brazil (1995: 21), himself, states that Chomsky's demonstration that a linear grammar cannot generate all the potential sentences of the language is, 'one of the least questioned arguments in the literature of linguistics' but

he goes on to state that Chomsky's demonstration 'is intended and is to be understood as a contribution to the elaboration of sentence-oriented grammars'. It has little relevance to a grammar of used language. Chomsky's view has been criticized for merely predicting what people can do without being able to predict what speakers in pursuit of their communicative needs tend to do (Pawley and Syder 1983: 193). Furthermore, Chomsky's argument rests upon the premise that linguistic competence can be viewed as the ability to transform a simple underlying structure or kernel through the operation of a series of syntactic rules into a spoken utterance. The ability to transform kernels is, however, incapable of explaining why certain lexical items collocate together and why certain verbs tend not to be used in the passive and, therefore, appears dubious and incapable of explaining how speakers produce used language (Gross 1974). Neither can Chomsky's argument explain why certain verbs such as *reputed* and *rumoured* occur only in the passive (see Huddleston and Pullum 2002: 1435).

A further argument found in favour of a constituent analysis of language and, hence contra linear grammars, is the discussion of *garden path sentences*.⁵ Pinker (1994: 212–17) argues that garden path sentences, such as (8), demonstrate that sentences must be parsed correctly prior to understanding.

- (8) The horse raced past the barn fell (ibid. 212)

He claims that hearers have problems with this sentence because they first attempt to parse it as:

- (9) [the horse] [raced past the barn] fell
 NP VP ?

Once the hearer perceives *fell*, the hearer is forced to reinterpret *raced past the barn* not as the main verb phrase of the sentence but rather as a reduction of the relative clause *that raced past the barn*. (8) has the potential to satisfy a communicative need and so a grammar of speech must be able to describe it. Brazil (1995: 232), in fact, analyses (8) as follows:

- (10) The horse raced past the barn fell
 d N Ø v p d n V #

The speaker first produces the required N element *the horse* which anticipates a V element. However, production of the V element *fell* is suspended by the *Øvpdn* subchain. The suspensive subchain, by definition, cannot produce

a new intermediate state. The speaker remains obliged to produce the V element *fell*, which completes the telling. According to this view, if the hearer proceeds up a garden path, it is not because the hearer has incorrectly parsed the sentence, but rather because the speaker has misjudged the state of speaker/hearer convergence and assumed incorrectly that the hearer recognizes which horse is under discussion.

The Chomskyan view of language, which argues that the language system is mentally represented innate de-contextualized knowledge which a speaker accesses prior to use, has been criticized by Hopper (1987, 1998) as being incapable of explaining how language is both ontogenetically and phylogenetically acquired and used. Hopper argues that grammar emerges from the discourse and is itself shaped by the discourse as much as it shapes the discourse. Structure is not, he says, the result of an overarching set of principles but is instead the spreading of regularities in discourse. Hopper (1998: 159) argues that each individual's speech is 'a vast collection of hand-me-downs that reaches back to the beginnings of the language'. The language each individual uses is influenced by the speaker's unique and individual experiences with the language. Everyday language is not a collection of freely constructed novel sentences but is instead built up out of combinations of ready-made regularities previously experienced by the speaker and pre-existing in the discourse.

Some empirical support for Hopper's theory is found in Elman (1990: 195–203) who describes a 'sentence generator program' which he used to construct a set of two- and three word 'sentences'. After a number of training sets the program developed internal representations which allowed it to predict which kind of words followed other words. Despite not being trained to recognize the categorical distinction between nouns and verbs the programme learned to recognize that certain words (verbs) typically followed other words (nouns) and that certain verbs prospected a direct object while others did not; it learnt how to distinguish transitive from intransitive verbs (ibid. 199). Weber (1997) provides some further support for Hopper's theory. He claims that because linguistic meaning is inherently emergent it can only be explained by a grammar such as Hopper's which is 'dynamic, individual and indeterminate'. More support for Hopper's theory is found in Pierrehumbert (2001: 143) who states that a usage based theory is a more accurate predictor of the realities of speech than a rule based approach. She (ibid. 143) argues that a usage based theory is better able to predict and explain regularities and differences in the lenition of phonemes across languages and dialects than can a rule based context free theory such as Chomsky and Halle (1968).

To conclude, this subsection has argued that a grammar of used language does not have to explain the grammaticality of nonsense sentences which fulfil no communicative need. Demonstrations that all the potential sentences of the English language cannot be generated linearly do not entail that a linear grammar is incapable of accurately describing used language. The attested difficulty that hearers have in understanding garden path sentences can also be explained by a grammar such as Brazil's. In recent years, the theoretical underpinning of context free theories of language has come under attack and the alternate hypothesis that grammar emerges from regularities found in the discourse is not incompatible with a grammar of used language.

4.2 The Prospection of Lexical Items

Brazil (1995) argues that grammar as an abstract system only exists in the broadest terms. There are few rules as to what might be theoretically said, though in practice many possible utterances are extremely unlikely. The need to successfully achieve communicative ends ensures that only utterances which match individual hearer's previous expectations are likely to be produced. He claims that speakers in pursuit of their communicative goals produce lexical items which anticipate further lexical items. Stubbs (2002: 20) agrees and argues that communicative competence involves expectations of what is likely to occur in the discourse. Sinclair and Coulthard (1975) introduced the notion of *prospection*, which they explain as something occurring in discourse leading the hearer to expect something else to occur. Similarly Tadros (1985) speaks of prediction: the choice of one element determining a following element (see also Slobin 1978: 17) for an almost identical view, though Slobin argues that syntax is the ultimate determiner of the position of an element in a sentence. Brazil's view is a little different; he argues that previously occurring lexical items create expectancies which can be fulfilled by a prospection from a limited set of choices, i.e. a one-to-a-few relationship between the previous set of choices and the prospected rather than a one-to-one relationship between the previously uttered lexical element and the prospected element.

Hunston and Francis (2000) explore the issue of lexical prospection in their careful study of the Bank of English and propose a *pattern grammar*; a grammar based on lexical patterns rather than syntactic rules. They claim:

The patterns of a word can be defined as all the words and structures which are regularly associated with the word and which contribute to its

meaning. A pattern can be identified if a combination of words occurs relatively frequently, if it is dependent on a particular word choice, and if there is a clear meaning associated with it. (Ibid. 37)

They argue that a great deal of discourse ‘is dependent on lexical choices and the patterning of specific lexical items’ (ibid. 206). Words with similar senses tend to have similar patterns, so the patterning of lexical items generates meaning. Pattern grammar is, they claim, compatible with either a traditional constituent analysis or a linear analysis (ibid. 208). Thus, their coding $V \dots n$ may mean a verb followed by the whole of a noun group, or a verb followed by anything up to and including a noun. To illustrate, in (12) below, from a constituent standpoint the **there V n**⁶ pattern of the sentence *there are whales swimming freely about* encompasses the entire sentence but from a linear perspective it only encompasses the elements *there are whales*.

They state (ibid. 235) that a linear interpretation of a pattern grammar has a number of advantages over a constituent analysis, notably: in demonstrating how patterns flow in extended text; and in addressing two grammatical ‘problems’. The first they label ‘the problem of embedded clauses’: the fact that units of one rank, such as clauses occur as components of units at the same or lower rank. Their example illustrates:

- (11) I regret *that he should be so stubborn*
 N V N+ N V V' A E

The rank-shifted clause *that he should be so stubborn* operates as the object of the verb *regret*. Hunston and Francis argue (ibid. 236) that embedded or rank-shifted clauses are ‘an awkward anomaly’ in theories of grammar such as Halliday (1994) which are predicated on a theory of rank. As example (11) demonstrates, the paradox is avoided if Brazil’s linear conventions are utilized. The second complication is ‘the problem of “there”’ (ibid. 237). Hunston and Francis identify a difficulty in coding the pattern of *there* functioning as a dummy subject. Two examples from their corpus illustrate.

- (12) There are whales swimming freely about
 N V d° N V' A+ A
- (13) There are great sources of pain in everyone.
 N V d° e N P+ N P N

While the lexical patterns proposed by Hunston and Francis are not incompatible with Brazil's chaining rules, they have the potential to result in a different analysis of the same utterance, e.g.

- The fact that he wrote a letter to her suggests that he knew her
- N ... that V that
- V n to ... n
- (Hunston and Francis's coding)

Brazil (1995) claims that the N element *fact* prospects a following V element and this prospection is satisfied by the V element *suggests*. Hunston and Francis argue that the lexical item *fact* prospects the *that* clause. The difference arises because Brazil focuses on the truism that N elements prospect V elements, while Hunston and Francis focus more narrowly on the lexical patterns belonging to *fact*, one of which is **N . . . that**.

Hunston and Francis (ibid. 243), however, recognize that an N element prospects a subsequent V element and state:

Fact, then, prospects two things – the that-clause, and the following verb – and one prospection is put on hold while the other is fulfilled.

Combining Hunston and Francis's work with that of Brazil, at least in theory, allows for a more complete grammar of used language to emerge. However, until more work has been done in identifying patterns it will not be possible to integrate the two theories in practice.

4.3 Units of Selection

Brazil's grammar codes used language as chains of lexical elements, which unfold in time and serve to meet communicative needs. Brazil (1995) apparently considers the orthographic word to be the appropriate slot filling element.⁹ Thus, it appears that he would code example (15) as:

- (15) It's raining cats and dogs.
 NV V' N & N rather than as
 N PHR-V¹⁰

Carter (1987: 5) recognizes that while *to rain cats and dogs* consists of more than one orthographic word, it is a 'lexeme': a unit which cannot be decomposed into its constituent orthographic words without loss of meaning; it represents a single sense selection. Numerous scholars in the fields of second language acquisition and psycholinguistics, such as Nattinger and DeCarrico (1992: 1), Pawley and Syder (1983: 205), McCarthy (1990: 5–10), Melčuk (1995) (cited in Hunston and Francis 2000: 7–9) and Moon (1992) argue that some lexical phrases are stored in the lexicon as single elements. All seemingly recognize *to rain cats and dogs* as an idiom and hence a single lexical element which for the purposes of discourse analysis should no more be decomposed into its component parts than the lexical element *worker* should be decomposed into its two constituent morphemes *work* and *er*.

However, there is disagreement in the literature as to what is and what isn't a single lexical item. Wray (2002: 9) lists 58 terms found in the literature which describe lexical items containing more than one orthographic word and cautions that the terms are not all synonymous.

For instance, Moon (1992) distinguishes between *anomalous collocations*, e.g. *by and large*, which cannot be analysed by the normal lexical rules of English; *formulae*, e.g. *shut your mouth*; and *fossilized metaphors*, e.g. *spill the beans*. Moon (1994: 117; 1998: 35) argues that all three types of lexical elements represent single meaningful speaker selections. On the other hand Melčuk (1995) distinguishes between *free* and *non-free phrases*. A phrase is free if its semantic and syntactic properties are determined by the semantic properties of the 'words' which make up the phrase. For example, the meaning of the free phrase *tell a joke* is determined by the semantic properties of its constituent 'words' *tell* and *joke*. On the other hand, the meaning of *crack a joke* is not determined by the semantic properties of the constituent 'words'. Non-free phrases alone, according to Melčuk, are stored in the lexicon as single elements. Yet as Hunston and Francis (2000: 9) point out both *tell* and *crack* collocate with *joke* (as does *make*); therefore it appears inconsistent to describe *crack a joke* as a fixed phrase and *tell a joke* as a free phrase. To illustrate:

- (16) I tell a joke
N V d N

- (17) I crack a joke
N PHR-V

Treating (16) and (17) differently is both intuitively unsatisfying as well as being counter-productive to a fully transparent description of speech. The difference in the coding obscures the fact that (16) and (17) could easily operate as communicative synonyms.

Nattinger and DeCarrico (1992: 1) hold the view that even lexical phrases longer than clauses which allow for limited lexical substitution, such as *if I X then you Y* have the potential to be stored in the lexicon as single elements. As a result it seems that Carter (1987: 58–65) is correct to maintain that the lexical system is best viewed as a cline which runs from less fixed elements to more fixed elements rather than as a dichotomy of words and phrases. Stefanowitsch and Gries (2003: 212) agree, and argue that the linguistic system is best viewed as a continuum of successively more abstract meaningful units, which themselves cannot be compositionally decomposed, from single morphemes such as *mis* to more abstract constructions such as the *English distransitive subcategorization frame S V Oi Od*, e.g. *John gave Mary a ball*.

Sinclair (1991: 109) acknowledges that the usual way of viewing language is that it is the accumulation of a very large number of complex choices.

The difference in coding between (19) and (20) seems to neatly capture the communicative ambiguity authored by Adams.

Brazil himself, while arguing that word-like elements filled the slots in his grammatical chains, also claimed that speakers could simultaneously select more than one word-like element, i.e. an entire tonic segment. He provides the example (1997: 37):

- (21) // the QUEEN of HEARTS //
 d N P N

and argues that the entire tonic segment *Queen of Hearts* realizes an existential value of not the *Ace of Spades*, the *King of Clubs*, etc. Thus, Brazil recognizes that speakers' intonational selections indicate that at times they are assembling speech according to a principle similar to the idiom principle and at other times according to a principle similar to the open-choice principle.¹¹

Before returning to a discussion of how best to code unitary elements larger in extent than orthographic words, the remainder of this section examines evidence which offers some empirical support for the view that the unit of selection tends to be larger in extent than the orthographic word. The first piece of evidence to be reviewed is that of *phase*. Hunston and Francis (2000: 169) state that two verbs are in phase if the verbs taken together represent a single meaningful choice. As evidence for this argument they produce the following example:

- (22) He seems to be an intelligent person

and argue that (22) appears to be a possible response to the questions *What does he seem to be?* or *What is he, in your opinion?* but not the question *What does he seem?*. The motivation for considering two verbs, such as *seems to be*, to be in phase is that they appear to represent a single choice with the first verb altering an aspect of the second verb which is the main carrier of information (Downing and Locke 1992). If a phase analysis is adopted the verbs *managed to close down* and *wanted to start* in (23) and (24), from Hunston and Francis (2000), represent single meaningful choices.

- (23) The police managed to close down the party
 (24) I wanted to start a magazine

As Hunston and Francis argue, the analysis that *managed to close down* is in phase appears reasonable. The main information in the sentence is *the police*

closed down the party. However, (24) does not carry the meaning *I started a magazine*, and so a phase analysis appears to produce an odd result. A more reasonable constituent analysis would be that *to start a magazine* is the object of the verb (ibid. 171–3). The oddity of the phase analysis for (24) leads Hunston and Francis to propose that:

Our principle, then, is that two verbs are in phase only when they indicate that the action realised by the second verb is or is not done.

Example (23) is in phase, whereas (24) is not. The grammar of used language proposed in Brazil (1995) analyses examples (23) and (24) identically and so misses the fact that the verb *close down* is the main carrier of information in (23), whereas neither verb in (24) operates as the main carrier of information. (23) and (24) are analysed using the conventions of Brazil (1995) and reprinted below as (25) and (26).

- (25) The police managed to close down the party
 d N V V' d N
 d N PHR-V d N (phase coding)
- (26) I wanted to start a magazine
 N V V' d N

The phase coding in (25) appears to provide a more accurate and transparent description in that it highlights that *managed to close down* represents a single meaningful selection.

The second piece of evidence which suggests that the unit of selection may be larger in extent than an orthographic word is found in Brazil's own coding of verbal elements. He (1995: 80–9) explores the temporal relationship between a finite and a following non-finite verb. He argues that the **V to-inf** pattern indicates that the V element may have either undifferentiating reference (speaking time and event time are one and the same) or differentiating reference (speaking time and event time are not one and the same). The finite verb in (26) has a differentiated time reference and refers to an event time prior to the speaking time. The non-finite verb time reference of *to start* is anticipated at the event time and occurs, if at all, at a later stage. Brazil's analysis appears eminently satisfactory. However, application of the same analysis to the **V-ing** pattern is problematic. Brazil (1995: 108) states that the finite *to be* verb, realized as *am*, *is*, and *are*, indicates undifferentiated time reference. The **-ing** non-finite verb has a time reference

which coincides with the time reference of the finite verb. Examples (27) to (29), from Quirk and Greenbaum (1973: 48) demonstrate the problem with this analysis.

- (27) They are washing the dishes {now}/{later}
- (28) He's moving to London
- (29) The president is coming to the UN this week

Examples (28) and (29) show that the **V-ing** pattern has the potential to signal an anticipated future happening. Example (27), without the addition of the time adverbial, has ambiguous time reference. It seems impossible to equate Brazil's analysis with the potential futurity of utterances which contain **V-ing** verb patterns. Perhaps the most likely explanation, which accounts for the potential futurity patterns, is that the finite and non-finite verb have merged, through the process of grammaticalization¹² into a single lexical element which is used to label an utterance with a future time reference. Accordingly it is suggested that example (27) be coded in two different ways depending on the open-choice and idiom principles.

- (30) They are washing the dishes [now]
 N V V' d N
- (31) They are washing the dishes [later]
 N PHR-V d N

The coding in example (30) indicates that no grammaticalization has occurred. The finite V element indicates a speaker selection of undifferentiated time; the following V' element indicates that the *washing* occurs as the same time as the speaking. The coding in (31) on the other hand indicates that grammaticalization has occurred and that the *washing* has not yet occurred at the time of speaking and that *are washing* represents one slot and not two in a grammatical chain.

The final strand of evidence reviewed here is from research into speech errors which provides some further evidence for the existence of pre-assembled phrase-like elements. However, caution must be exercised in generalizing from pathology as the breakdown of a system may not necessarily reflect its normal workings. Jackendoff (2002) observes that little is known about how speech, rather than the abstract system of language, is produced. Perhaps the most complete account to date is that of Levelt (1989) who proposed a four-stage model of language production: *conceptualizing* (translating or encoding thought into language); *formulating*

(planning the linguistic representation of the message); *articulating* (producing the physical message through muscular movement) and *self-monitoring*. The stage of formulating is of interest in that it may shed some light on the extent of the lexical elements which occupy a single slot in a grammatical chain. Fromkin (1973 and 1980) argues that the study of speech errors casts valuable light on how speakers assemble their messages. If they primarily assemble their utterances word-like element by word-like element (Sinclair's open-choice principle) then there should be no overlap between the autonomous word-like elements. If however, they usually assemble their utterances from larger pre-assembled chunks (Sinclair's idiom principle) overlap between word-like elements is predicted to occur.

Carroll (1994: 191) and Anderson (1990: 337) both provide the same two speech errors from the legendary Dr William Spooner,¹³ printed as (32) and (33).

(32) You have **hissed** (*missed*)¹⁴ all my **mystery** (*history*) lectures.

(33) I saw you **fight** (*light*) a **liar** (*fire*) in the back quad; you have **tasted** (*wasted*) the whole **worm** (*term*).

Examples (32) and (33) suggest that Spooner treated *missed all my history lectures*, *light a fire*, and *wasted the whole term* as single chunks and assembled these examples in line with Sinclair's idiom principle. Fromkin (1973 and 1980) produced a classification of the major types of errors, of which four classes are of importance to this study, and are set out in Table 4.1.¹⁵

The examples in Table 4.1 suggest that the speakers treated *decides to hit*, *nose remodelled*,¹⁶ *take my bike*, and *pulled a tantrum* as single meaningful chunks.¹⁷ The evidence gleaned from speech errors indicates that speech is, at least at times, assembled out of chunks which are larger than orthographic words. Carroll (1994: 192) comments that:

If you have closely examined these examples, [printed in Table 4.1] you probably have noticed by now that these types of errors occur with a number of different linguistic units.

Table 4.1 Major types of speech errors occurring beyond the orthographic word

Type	Example
Shift	That's so she'll be ready in case <i>she decide to hits it (decides to hit it)</i>
Exchange	Fancy getting your <i>model renosed (nose remodelled)</i>
Anticipation	<i>Bake my bike (take my bike)</i>
Perseveration	He <i>pulled a pantrum (pulled a tantrum)</i>

This comment is broadly in line with Sinclair's (1991: 110) observation that, at times, speakers assemble speech from lexical elements coterminous with orthographic words (the open-choice principle), but in the majority of cases they assemble speech from items coterminous with more than one orthographic word (the idiom principle), which may appear to be analysable into smaller segments. Stubbs (2002: 14) agrees and argues that combinations of words in phrases are a strong candidate for the core semantic unit of language. The implication appears to be that breaking down chunks into smaller segments does not help to construct a transparent and descriptively accurate grammar.

However, the difficulty is that as of yet no-one has successfully identified and coded these core semantic units. Accordingly, caution is in order when coding grammatical chains. Brazil (1995: 44) remarked that his use of traditional terms such as N and V elements was:

no more than a convenience, and one which we must be prepared to abandon if and when the need arises.

Thus, if, or perhaps when, corpus linguists identify the core semantic units of the language a grammar of used language should be represented as a chain comprised of such units. Such a recoding would have the dual advantage of rendering the coding more descriptively transparent as well as more psychologically reflective of how speech is produced. Until that day, however, there is no choice but to code using traditional conventions.

To summarize, the discussion in this section leads us to propose that a PHR (phrase) element be added to Brazil's descriptive coding in three instances. First where orthographic words coalesce into a larger element, such as an idiom, which cannot be decomposed without loss of meaning;¹⁸ second where V elements are in phase; and finally where the **V-ing** pattern refers to a future activity.

4.4 Two Features of Spoken Language

Brazil claims that his chaining rules have the potential to describe all possible instantiations of telling and asking exchanges. A moment's reflection, however, is enough to show that the rules are too restrictive to account for all instances of English speech. This section looks at two *features of spoken language*: ellipsis and dysfluencies which have been chosen because, while unmentioned in Brazil (1995), their existence is incontrovertible and they

appear to contravene the proposed chaining rules. They will be described and coded using Brazil's notation and an attempt will be made to suggest a possible way of incorporating them into the grammar.

4.4.1 Ellipsis

Ellipsis is the omission of lexical items or clauses which are recoverable from the situation or preceding text (Biber et al. 1999: 156). It can occur at the beginning, middle, or end of an utterance (McCarthy 1991: 43) though Biber et al. (1999: 1104) state that in conversation ellipsis is usually either initial or final. Ellipsis is classified as either *textual* or *situational*. Textual ellipsis is a means of avoiding unnecessary and redundant repetition of previous items which are predictable and recoverable from the preceding co-text. Situational ellipsis is the non-realization of lexical elements which are obvious from the situational context. Biber et al. (1999) present the following examples of textual ellipsis which they divide into three categories: ellipsis, in co-ordinate clauses, in questions and answers, and in comparative clauses.

- (34) He squeezed her hand but <he> met with no response¹⁹

N V d N &²⁰ V P d N

- (35) Have you got an exam on Monday?

V N V' d N P N

<I've got> two exams <on Monday>

e N

- (36) She looks older than my mother <does>

N V E P d N

Brazil (1995) does not discuss textual ellipsis, although there are two examples (37) and (38) in his corpus of clause initial textual ellipsis printed below with Brazil's original coding.²¹

- (37) She just happens to look across and sees her hands . . .

N V V' A Ø # & V d N Ø #

- (38) and so she went and sat in the car

& N V & V P d N

He (1995: 219) discusses example (38) and says:

. . . the speaker re-uses some earlier part of the chain and continues it in a different way.

It is difficult to know exactly what he means by this comment but it seems that he envisages chains where speakers have the freedom to double back to previous intermediate states. In (38), according to this view, the N element *she* prospects both following V elements *went* and *sat*. It seems that *and* signals to the hearer the speaker's re-use of an earlier part of the chain. Such an explanation implies that there is no need to overtly code the ellipsis. However, there are two problems with this view. The first is that it seemingly contradicts Brazil's defence of his introduction of the \emptyset symbol (ibid. 132) where he claimed that it is sometimes helpful to make use of the \emptyset symbol for the expected element which is unrealized in the chain because the \emptyset symbol allows for a more descriptively powerful grammar. The second point is that Brazil's explanation only applies, as he makes clear, if the ellipsis occurs in the same increment as the element which the speaker re-uses. Example (37) shows that ellipsis occurs in a different chain from the re-used N element. This raises the counterintuitive solution of coding the ellipsis in (37) but not in (38). In the interests of consistency and clarity it is suggested that all instances of ellipsis be coded with the \emptyset symbol: a symbol intended to indicate that something, without attempting to specify what, according to the formal rules of the grammar is missing from the chain.²²

There are no instances of situational ellipsis in the monologic corpus studied by Brazil (1995) which he used to generate his proposed chaining rules. Carter and McCarthy (1997: 14) note that in spoken English, ellipsis is mainly situational. They state that it frequently involves the omission of personal pronouns where the identity of the speaker is unambiguous and provide the example:

- (39) A: What's the matter?
 B: Got an awful cold (ellipsis of I've)

which, following the discussion above, is coded as

- (40) Got an awful cold
 \emptyset V' d e N

The coding in (40) indicates that speaker (B), with (A's) assistance, completed the chain; the hearer using their own cognitive environment was able to fill in the unrealized items and allot them to their proper slots in the grammatical chain.

McCarthy (1991: 43) argues that ellipsis is a pragmatic speaker choice and not a compulsory feature generated when two clauses are joined. Hence it is not possible to predict occurrences of ellipsis within a grammar. However, it is possible to predict instances when ellipsis is likely to be realized. In (40) the ellipsis of the lexical element *I* is predictable.²³ Speaker A's question, in the context in which it was asked, was concerned with the well-being of speaker B and so B's use of ellipsis is entirely predictable. This raises the issue of what added communicative value if any is produced by the unexpected overt realization of words which an analyst predicts should be unrealized, e.g.

- (41) A: What's the matter?
 B: I've got an awful cold

In (41), speaker (B) produces the lexical elements *I've*. Such a response could be uttered with the lexical item *I* either prominent or not. Non-prominence signals that it is already part of the common speaker/hearer background and so its overt realization appears to have no significant communicative value. However, if it is made prominent the speaker projects it as representing a communicatively significant selection from an existential paradigm. By exploiting the freedom to project the existence of a possible opposition to the lexical item *I* the speaker is able to generate added meaning. For example, the overt realization of a prominent *I* serves to personalize and focus the response. By focusing on him/herself the speaker highlights that he/she is the one who is suffering from the cold. A local meaning could perhaps be an appeal for sympathy.

A reasonable approach in attempting to incorporate ellipsis into a grammar of used language appears to be as follows. First to identify the criterion which predicts the elliptical realization of a lexical element or elements. The suggested criterion is that in the unmarked case, speakers avoid repetition by not overtly realizing lexical elements whose presence is recoverable from either the preceding text or situation. Second to acknowledge that a grammar of used language must be capable of describing both utterances where speakers produce elliptical and non-elliptical realizations of lexical elements. Third to recognize that a grammar of used language, which predicts the overt realization of predictable lexical elements, is an idealized abstraction which, in real communicative situations, is constrained by a speaker's need for economy. Fourth to recognize that it is the non-occurrence of predicted ellipsis when the particular lexical element is made prominent that is of added communicative value.

Grice's maxim of manner states that cooperative speakers avoid being prolix. If a speaker overtly realizes predictable lexical elements a hearer is entitled to assume that the speaker flouted Grice's maxim in pursuit of a communicative purpose. Similarly, Sperber and Wilson (1995: 49) argue that speakers, according to their Principle of Relevance, attempt to reduce hearers' processing costs. If they overtly realize predictable lexical elements and make them prominent the hearers can assume that these lexical items are likely to be of added communicative value. Finally to identify and code all potential predictable occurrences of ellipsis.

In order to highlight the added communicative value of prominent lexical elements which an analyst predicts should not have been overtly realized the following coding is suggested.

(42) A: What's the matter?

W V d N

B: // I' ve got an awful COLD //
NØ V V' d e N

(43) A: What's the matter?

W V d N

B: // i HAVE got an awful COLD //
N VØ V' d e N

In (42) the NØ coding indicates a marked case where an N element was produced and made prominent whereas in the unmarked case the N element would have been realized by zero or uttered without prominence. A similar argument applies to the VØ coding in (43).

(44) A: What's the matter?

W V d N

B: // i' ve got an awful COLD //
N V V' d e N

In (44) the speaker realizes *I've* but does not make either the N or the V element prominent. This indicates that the speaker projects that neither element represents a sense selection; the elements are redundant slot fillers in the grammatical chain. The intermediate state created by the NV elements *I've* was an intermediate state already available to the hearer. Little if anything would have been altered had the speaker not overtly realized these lexical elements. They are, however, included in the grammar simply

because they were said. Hence (44) realizes an identical communicative value with example (45) which represents the unmarked case.

(45) A: What's the matter?

W V d N

B: // got an awful COLD //

Ø V' d e N

To conclude it appears that Brazil's chaining rules represent the maximum idealized chain required to satisfy communicative needs but in real communicative situations when speakers can omit predictable lexical elements or indeed syllables within words and still achieve their communicative purposes, they are likely to do so. As McCarthy (1991: 43) notes structures are only fully realized when they have to be. And if they are fully realized when they do not have to be, it seems that speakers may be attempting to add value to their utterance.

4.4.2 Dysfluencies

This subsection discusses speaker dysfluencies which may lead to the redundant repetition of lexical elements or the abandonment of increments prior to the achievement of target state and considers how such dysfluencies should be coded within the grammar. Dysfluency is indicated by utterance initial and medial pauses. Such pauses may be filled or unfilled. Filled pauses are transcribed as *uh* and *um* in American English and *er* and *erm* in British English (Biber et al. 1999: 1053). Fox Tree (2002: 52) has produced experimental evidence showing that filled pauses signalled by *um* indicate that the speaker has advance knowledge of the upcoming delay. In other words, filled pauses in utterance initial and medial position signal fewer production difficulties than silent pauses. Clark and Fox Tree (2002) suggest that *um* signals a major delay while *uh* signals a more minor delay or hitch. In any case, all instances of dysfluencies have the potential to obscure the workings of speakers' grammatical chains.

Cruttenden (1997: 31) identifies three types of pause which he states may be either filled or unfilled; at major constituent boundaries principally between clauses, and between subject and predicate; before words of high lexical (informational) context; and false starts; usually after the first word

in a tone unit. He states that latter two types, types 2 and 3, represent instances of hesitation phenomena (ibid. 31–2). In the first case the speaker indicates a momentary processing difficulty in locating the correct word while the latter case is a holding operation which gains the speaker time to plan the rest of the utterance. As both types may result in incomplete tone units or tone units with level tone, it will not always be possible to state with certainty whether the incomplete tone unit or the realization of level tone is an example of Cruttenden's type 2 or 3 pause. Some examples from Brazil (1997: 147–8) may clarify.²⁴

- (46) // p he GAMbled // and LOST ... // p LOST a FORtune //
Type 2

N V & Ø V V d N

- (47) // he WAITed ... // p he THOUGHT he'd better WAIT //
Type 3

N V ... N V Ø N V V'

- (48) // and ... // p he THOUGHT he'd better WAIT //
Type 3

& N V Ø N V V'

Example (46) appears to be best interpreted as an instance of a type 2 pause with the speaker struggling to locate *fortune*, though Biber et al. (1999: 1055) state that speakers repeat the same piece of speech in order to gain planning time. Examples (47) and (48) appear to be instances of type 3 pauses. The speaker in (47) produces a false start, hesitates, gains planning time, and assembles his message. In (48) the speaker hesitates in order to gain planning time to allow for the assembly of the remainder of the utterance. It is possible, however, to construct examples such as (49) which are not readily interpretable as either a type 2 or 3 pause.²⁵

- (49) // – and the ANswer is // \ TWENTy pints of BEER //
& d N V d° e N P N

It is not clear whether the speaker pauses at the tone unit boundary because he/she is searching for the lexical item *twenty* or marshalling the remainder of the utterance.

Brazil (1995: 211–13) discusses four possible types of 'on-line amendments' which he explains as speakers in mid-increment realizing that they are

heading for an inappropriate target state and so they change tack. Brazil's four types are:

Second thoughts

The speaker rethinks what needs to be told before the increment can achieve target state. Example (47) from Brazil (1997: 147) reprinted as (50) provides an example:

- (50) // he WAITed ... // he THOUGHT he'd better WAIT //
 N V ... N V Ø N V V'

The speaker breaks off the chain, rethinks the increment and signals that he/she has changed tack by producing new NV elements. Brazil's coding appears to adequately capture the speaker's change of direction.

Repetition of an element

The speaker repeats an element in order to gain planning time: (46) from Brazil (1997: 148) reprinted as (51), demonstrates:

- (51) //\ he GAMbled // and LOST ... //\ LOST a FORtune //
 N V & Ø V ... V d N

In this example the ... coding signals the speaker's hesitation, but fails to capture the redundant repetition. As the repetition of the V element does not lead to a further intermediate state it is suggested that the coding be made more transparent by enclosing the first element of the repeated pair within brackets, e.g.

- (52) //\ he GAMbled // and LOST ... //\ LOST a FORtune //
 N V & Ø (V) V d N

Backtracking

This category refers to instances where speakers break off the chain and back-track in order to insert material which they feel they should have previously included. Examples (53) and (54) from Brazil (1995: 212) demonstrate:

- (53) she hadn't locked the car ... presumably she hadn't
 N V V' d N ... a N V Ø

- (54) it wasn't really . . . it definitely wasn't a little old lady
 N V a . . . N a V d e e N

The . . . coding appears to adequately capture the dysfluency in (54). The speaker starts a chain but abandons it in order to backtrack and include a more powerful A element. In (53) the speaker has completed a run through of the chaining rules before realizing that he/she has not produced an utterance which fulfils the speaker's communicative need. The speaker then produces further elements which lead to the achievement of target state. However, the . . . coding obscures the fact that the speaker in (53) has not abandoned an increment. Therefore it is suggested that the example should be coded as follows:

- (55) she hadn't locked the car . . . presumably she hadn't
 N V V' d N a N V Ø

The coding in (55) without the . . . coding on the grammar line represents the fact that the speaker has run through two grammatical chains in order to reach the required target state.

Substitution

The speaker substitutes a previously uttered element with a following element, e.g. (56) from Brazil (*ibid.* 212) demonstrates:

- (56) she didn't say . . . didn't know where it was
 N V . . . V W+ N V

Again the . . . coding in the grammar line appears to suggest erroneously that the speaker has abandoned the increment. In fact the speaker appears to have decided to substitute a V element for a previously uttered one within the same increment. The substitution of the second V element for the first cancels and replaces the intermediate state produced by the earlier V element. In order to make the replacement of an intermediate state transparent in the grammatical coding it is suggested that example (56) be recoded as (57) below:

- (57) she didn't say . . . didn't know where it was
 N (V) V W+ N V

The first V element is bracketed to highlight that ultimately it did not result in the creation of an intermediate state which led to the achievement of the target state.

This section has suggested ways of coding dysfluencies which filter them out in order to highlight the workings of the chains. It has not attempted to look at utterance-final pauses because such pauses do not affect the operation of the chaining rules.²⁶

4.4.3 Summary

This section has evaluated how Brazil's grammar of used language deals with two *language features*. It was argued that speakers usually realize predictable lexical items elliptically. Recognition that speakers produce the most economical messages allows for the prediction of likely occurrences of ellipsis. Some instances of dysfluencies were shown to disrupt the order of Brazil's chains and possible codings were suggested which allow the workings of the chains to be made more transparent.

4.5 Inconsistencies in the Coding

This section briefly describes and discusses minor inconsistencies in the final and presumably definitive transcript found in Brazil (1995: 215–18). On line 2 (page 215) we find:

(57) and she came back to this multi-storey car park
& N V A+ P d e N+ N

Of interest is the coding of *car park* (see also driveway line 45 and *backseat* line 51)²⁷ as reduplicating N elements. Cobuild notates all three lexical elements as *N elements*. In line with the previous discussion in Section 3 on the extent of slot filling elements, this book accepts and follows the Cobuild classification of some multi-word N elements as single N elements. This is because elements such as *car park*, *driveway* and *backseat* represent single meaningful lexical selections irrespective of how they are spelt.

The next point to be considered is how increment boundaries were marked. As there is no recourse to original recordings or intonation transcriptions it is impossible to comment on how the increment boundaries in Brazil (1995) were marked. To illustrate, on line 23 (Brazil 1995: 216) *and sees her hands* is notated as an increment but on line 3 (ibid. 215) *and it was*

kind of deserted is not notated as a separate increment. Both examples appear to fulfil a communicative need but an increment is only possible if it contains an end-falling tone; the point is simply that increment boundaries cannot be determined without reference to intonation.

The final point to be considered discusses elements which Brazil's grammar does not encode. These fall into two categories, the first of which is *linking elements* such as *and*, *but* and *so*. Brazil (1995: 218) argues that the absence of such linking elements does not alter the communicative value of the utterance. However, a difference in linking element seems to alter the communicative value of (58),

(58) She went to the local school *and/but* got into Oxford

Therefore in the interests of producing a grammar that codes as many meaningful elements as possible, they are coded here using the Cobuild convention as C. Brazil's coding of linking elements using an ampersand appears to suggest that linking elements are always additive. The second category consists of 'miscellaneous elements like *well*, *anyway*, and *I mean* in circumstances where they cannot be said to represent sense selections or enter into the organization of chains' (Brazil 1995: 214). Nevertheless, such elements express interpersonal meaning and hence they are again coded using the Cobuild conventions. Appendix 1 reprints the first 25 lines of the analysis in Brazil (1995) to illustrate the suggested changes.

4.6 Conclusion

This chapter has demonstrated that objections to the idea that a grammar of used language is feasible, based upon arguments that finite state grammars cannot generate all the possible sentences of a language, are not applicable. Discussion of the work of Hunston and Francis (2000) showed that lexical items contract syntagmatic relations with other lexical items. An individual lexical element not only prospects a following lexical element based upon its class membership but also prospects a following lexical element based upon its own pattern. Sinclair's open-choice and idiom principles were explained and discussed. Some evidence based on the discussion of verbs in phase, the analysis of the **V-ing** pattern, and slips of tongue suggests that the idiom principle is the default. However, because no foolproof way of identifying such idioms presently exists, the descriptive coding used in this book will employ Brazil's conventions and not attempt to encode

larger semantic elements except where expressly stated. Some minor additions to the coding were suggested to make the workings of the chains more transparent and to enable it to account for ellipsis and dysfluency. Finally a number of minor inconsistencies in Brazil's coding were pointed out and alternative codings were proposed.

Part III

The Inward Exploration of the Grammar

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Chapter 5

The Corpus and its Coding

The previous three chapters have completed what was described in Chapter 1 as the inward exploration of the grammar. This has been done both to provide support for the concept of a linear grammar and to generate questions worthy of further investigation. It has been demonstrated that neither the intonational systems of key and termination, nor the intonational system of tone have yet been fully incorporated within the grammar, and that a more fully complete grammar needs to notate such systems and features. This chapter describes the corpus used to test the proposed grammar and details how the lexical elements were coded. The following two chapters will test the proposed communicative values of tone, and key and terminations within increments.

5.1 The Corpus and the Readers

The corpus employed consists of eleven readings of two texts originally produced by Tony Blair. The first, a short televised address (hereinafter Text 1), was made on the morning of the 7 July 2005 at the G8 summit in Gleneagles and set out his initial reaction to the London bombings. The second (hereinafter Text 2) was an improvised answer to a question asking whether the recent Israeli invasion of Lebanon had damaged America's standing in the Middle East and was produced during a joint press conference with President Bush at the White House. Both texts represent instances of purposeful behaviour in pursuit of a communicative purpose: the first setting out Blair's plans to deal with the unexpected crisis and the second defending his foreign policy and outlining the existential threat that, he believes, is faced by the West. Texts 1 and 2 were chosen as examples of text

as product versus text as process. Text 1 is a prepared text and so should more easily comply with the grammatical rules set out in Brazil (1995). Text 2 is a (semi-scripted) spontaneous monologue which should allow scope for the testing of the methods suggested in the previous chapter for transcribing ellipsis and dysfluency.¹

Text 1 and Text 2 were listened to and transcribed orthographically by the author. The orthographic transcripts are presented in Appendix 2 and it will be noticed that both texts are unpunctuated: capital letters are only used to indicate proper nouns and the personal pronoun *I*. Some very minor editing of the texts was conducted in order to remove small dysfluencies in Blair's renditions of the two texts. The orthographic transcriptions given to the readers were unpunctuated to ensure that punctuation neither constrained their tonality divisions (Tench 1996: 51–2), nor the segmentation of their speech into increments.

All the readers who volunteered to take part in the readings were students studying at the Centre for Language and Communication Research at Cardiff University. All are native English speakers with nine being English, one Canadian and one a New Zealander.² The readers were given the orthographic transcriptions, plus some brief contextual information explaining the contexts in which the two texts had been produced, two days prior to their reading and instructed to read through the texts in order to familiarize themselves with their contents. They were encouraged to make notations on their copies of their transcriptions which they felt would help them read the texts aloud. Most of the readers notated their copies of Texts 1 and 2 prior to their reading the texts aloud.

The recordings took place in a university sound studio at a pre-arranged time with only the reader and the author present. Each individual recording session was scheduled for 15 minutes which allowed sufficient time for a brief warm-up chat which aimed to relax the readers prior to their reading and allowed for a short break between the recording of Texts 1 and 2. The readers were instructed to read the texts aloud as if they were delivering the speeches in the contexts in which the texts were originally produced. They were explicitly told that they were not to attempt to mimic the speaking style of Prime Minister Blair but to read the texts in their normal reading voice. Each reader was recorded reading both texts using a NAGRA ARES-BB digital recorder. The recordings were later converted into Wav files which were analysed.

Table 5.1 The readers and their readings

Reader	Sex	Education	Text 1			Text 2		
			Time*	Number of tone units	Number of increments	Time	Number of tone units	Number of increments
Bc	M	PhD	106	92	20	257	196	63
Bs	M	PhD	91	92	20	219	213	73
Dc	F	MA	107	89	20	293	201	68
Dmc	F	MA	134	79	19	319	179	64
Emi	F	BA	89	84	19	225	197	56
Gc	M	BA	88	86	21	206	189	66
Jt	M	BA	108	81	21	202	163	62
Mh	M	BA	77	75	19	208	157	60
Rf	F	MA	85	67	20	215	154	65
Sn	F	PhD	86	80	20	217	179	66
Tr	M	MA	93	78	20	253	174	69
Total			1064	903	219	2614	2002	712

*The time is given in seconds which are rounded up or down to the nearest complete second.

The eleven readers consisted of six males and five females. There were four undergraduate students, four students studying for their MA and three doctoral students. The entire corpus is 61.3 minutes long and comprises 2,905 tone units which form 931 increments. Table 5.1 summarizes the relevant information about the readers and their readings of both texts.³

In order to investigate whether there was more variation between the number of tone groups and increments produced by the eleven readers in Text 1 or in Text 2 the raw numbers were converted into standard scores. There proved to be no difference in variation between the numbers of tone units and increments produced by the readers in either text. This indicates that despite the greater difficulty in constructing the meaning of Text 2, which unlike Text 1 does not fully subscribe to a standard written grammar, the readers' tonality selections and their decisions on the placement of increment boundaries varied within a relatively narrow window.⁴ The charts shown in Figures 5.1–5.4 below suggest that the size of tone units reflects the systemic choices each individual reader made when projecting the meaning of the texts they read aloud.⁵ The issue of variation between readings will be discussed more fully in Section 5.2.1 below and in the following two chapters.

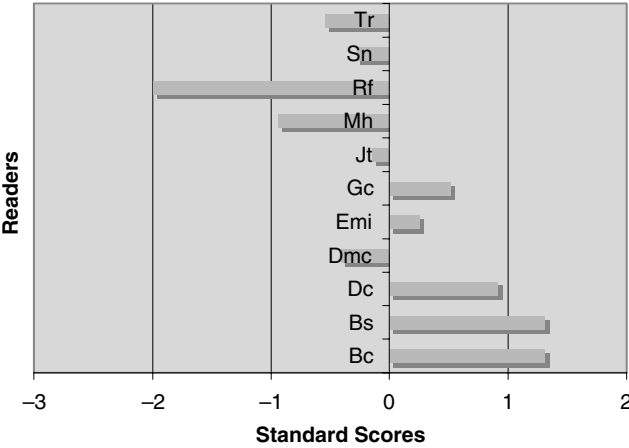


FIGURE 5.1 Variation in extent of tone units

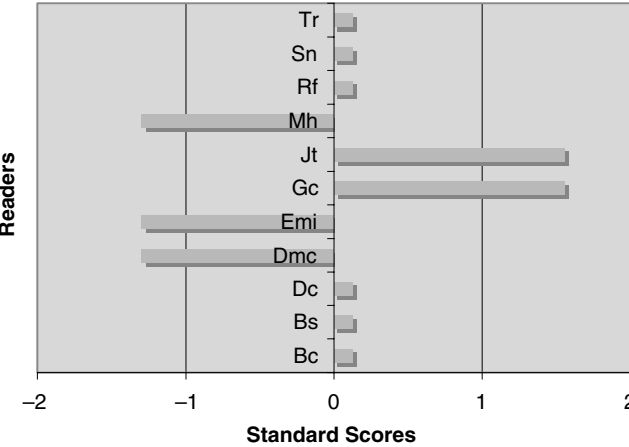


FIGURE 5.2 Text 1 variation in increment length

5.2 Transcribing the Corpus

As ultimately it is people who are the intended recipients of linguistic messages and it is human hearers who must attempt to try to tease out intended speaker meaning, it was decided to initially transcribe the readings of Texts 1 and 2 using only auditory means. This was done as

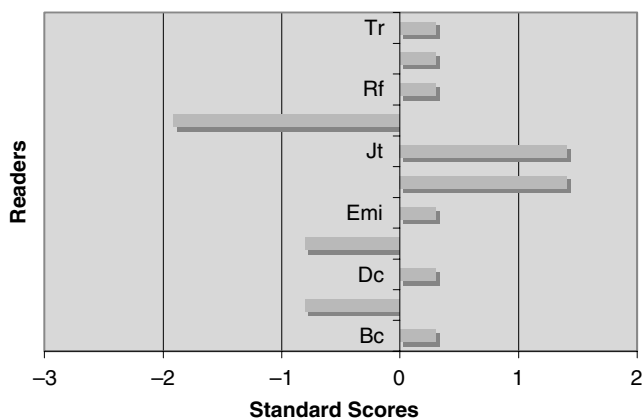


FIGURE 5.3 Text 2 variation in extent of tone units

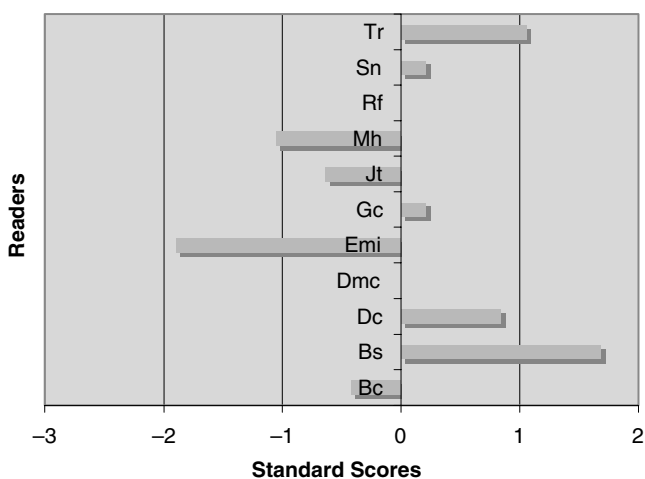


FIGURE 5.4 Text 2 variation in increment length

follows: the orthographic transcriptions were checked against the actual readings to ensure that there was an accurate orthographic record of what each individual reader had read. Then the individual recordings were listened to and all the prominent/salient syllables were identified. Once this process was complete the subset of prominent syllables, which are tonic, was identified and the tone units boundaries were marked. The next stage

was to notate the tone movements off the tonic syllables and once this was completed the key and termination selections were notated. Thus, each individual recording was carefully listened to on five separate occasions before an auditory intonation transcript was produced. Once the auditory transcriptions had been completed there were 22 transcriptions representing each reader's reading of Texts 1 and 2.

Brazil, when doing his own intonation transcriptions, relied solely on the auditory method of transcription which, however, is as Wichmann (2000: 2) points out, impressionistic. Pickering, Williams and Knowles (1996), in an analysis of transcriber differences in the compiling of the SEC corpus, illustrate the subjectiveness of auditory transcriptions. They report that two highly experienced transcribers differed in their marking of complex, simple and level tones with a 33% level of disagreement between the transcribers in how they marked level tone (*ibid.* 79). Pickering et al. speculate that the differences between the transcriptions resulted from the fact that:

. . . the transcribers make use of different thresholds in determining whether or not a change in fundamental frequency between syllables is significant. (*ibid.* 83)

In order to reduce the impressionistic element from the intonation analysis, all 22 recordings were analysed instrumentally using PRAAT version 5.1.⁶ This resulted in some changes to the transcriptions: namely whether a syllable was prominent, tonic syllable placements, tone movements and the notation of syllables as high or low key or as high or low termination selections.

Brazil (1997: 6) identifies tone unit boundaries through the presence or absence of a pause. Where there is no tonic syllable present before the pause he labels the tone unit as an incomplete one. This book, however, follows numerous other scholars such as Crystal and Davy (1975) and Halliday and Greaves (2008) in recognizing a difference between hesitation pauses and junctural pauses. Hence a tone unit boundary was marked only if there was a preceding tonic syllable e.g. from Bc's reading of Text 1.

(1) that the MEEting should . . . con\TINue in my absence //

Bc paused for 0.211 of a second between the words *should* and *continue*. As there is no tonic syllable within the tone unit prior to the pause it is notated by the three dots as a tone unit internal pause. Table 5.2 summarizes the readers' tone choices in Texts 1 and 2.

Table 5.2 Tone choices in Texts 1 and 2

Readers	Text 1					Text 2				
	Number of tones					Number of tones				
	\	/	–	∨	∧	\	/	–	∨	∧
Bc	55	20	1	14	2	117	25	13	38	3
Bs	62	13	1	15	1	149	38	5	17	4
Dc	58	13	2	13	3	130	34	4	30	3
Dmc	46	9	2	20	2	102	30	4	30	13
Emi	40	18	6	18	2	114	30	9	40	4
Gc	61	9	2	12	2	135	11	6	29	8
Jt	64	11	2	2	2	111	20	5	19	8
Mh	48	10	2	14	1	96	14	8	32	7
Rf	40	6	4	16	1	98	20	10	22	4
Sn	51	9	1	16	3	115	21	5	29	9
Tr	56	6	5	11	0	113	20	23	13	5

Table 5.2 illustrates that there was individual variation in the tones selected by the eleven readers; the readers selected differently from the meaning making resource of the tone system in order to construe their intended readings.⁷ Chapter 6 discusses how different tone selections add communicative value to the target state achieved within and between increments.

5.3 Coding the Corpus

In order to code the corpus into increments, the orthographic versions of Blair's readings of Texts 1 and 2 were coded. These coded versions were then used as templates and individual adjustments were made to the codings of the 22 readings to reflect any differences between the readers' readings and the printed text. The coding of the orthographic texts into increments was done without reference to intonation and so all the increments identified must be understood to be no more than possible increments dependent on the assumed presence of a tone unit containing a falling tone. The coding of the orthographic text into possible increments is presented in Appendix 3.

5.3.1 Identifying increment boundaries in Texts 1 and 2

In order to identify the readers' actual increment boundaries or the achievement of target state within an increment two formal conditions must be

satisfied. However, satisfaction of the two formal conditions is not enough; an act of telling is ultimately dependent on whether or not the speaker has satisfied a communicative need. Hence in order to identify an increment in speech it is first necessary to ensure that the formal conditions are met and then to see if the speaker has satisfied a communicative need. Examples (1) and (2) illustrate how 2 speakers segmented the same stream of speech differently.

- (1) you can \SEE this // you can see it in /KASHmir for example //
 N V V' N N V V' NP N phr
 you can SEE it in \CHECHnya // [T2-Bc12]⁸
 N V V' NP N #
- (2) you can \SEE this // you can \SEE it // in \KASHmir // for eXAMple
 N V V' N# N V V' P N PHR
 // you can SEE it in \CHECHnya // you /KNOW // [T2-Bs10-12]
 # N V V' NP N CON #

In examples (1) and (2) the readers have successfully completed three runs through the chaining rules but as Bc does not produce a falling tone unit until the third run through of the chaining rules he produces only one potential increment which was judged to satisfy a communicative need. Bc only achieves target state when he tells that in addition to the existence of the *terror and hatred* and its presence in *Kashmir* it is simultaneously present in *Chechyna*! Bs produces at least one falling tone within each successful run through of the chaining rules and as a result he produces three potential increments. As each successful run through of the chaining rules was judged to satisfy a communicative need, he has produced three increments. The first results in a target state where the speaker has moved the discourse to a point where the hearer's circumstances have been modified by the telling *that people can see the result of the terror and hatred*; the second increment tells a location where the *terror and hatred can be seen*: the third increment identifies a further location for *the terror and hatred*. Examples 3 and 4 illustrate how differing speaker perceptions result in differences in the placement of increment boundaries.

- (3) but it is \NOT a REASON for walking a/WAY // it s a REASON for
 c NV a d N P NPHR NV d N P
 STAYing the \COURSE // and STAYing it no matter HOW TOUGH
 N+ d N # c N+ N+ phr W E
 it \IS // [T2-Jt-44-45]
 N V Ø #

- (4) but it is ↑NOT a \REASON // for WALKing a \WAY // it s a REASON
 c N V a d N P NPHR # N V d N
 for STAYing the \COURSE // and \STAYing it // no MATter how
 P N+ d N d N+ N phr W
 TOUGH it \↓IS // [T2-Bs-52-52]
 E N V Ø #

In example (3) Jt presents the chain *but it is not a reason for walking away* as information which realizes an intermediate state: target state is only reached after the completion of the following tone unit. For Jt *the reason for walking away* is not an independent piece of information which satisfies a communicative need. However, for Bs the chain of elements *but it is not a reason for walking away* realizes an act of telling. He presents the chain *it is a reason for staying the course* as being little more than a restatement of his previous increment: an intermediate state prior to the achievement of target state which tells *how tough it will be to stay the course!*

In Brazil (1995) the speaker developed the ultimate telling of the monologue by using the target state achieved by the preceding increment as the initial state for the following increment until the monologue had been completed. There were no instances of speakers breaking off the increment they were producing in order to back track or to add a gloss, they presented as necessary for their ultimate telling. Examples (5) to (7) illustrates that in the corpus readers did interrupt increments to add glosses relevant to their ultimate telling.

- (5) the ↑REASON why they are \DOing // what they are DOing in i/
 d n w N V V' Ø W N V V' P+
 RAQ // at the \MOment // *Increment 30 interrupted by following increment*
 N P d N
 [and /YES // it is REALLY \TOUGH // as a re /SULT // of /↓IT //]
 c con N V A E P+ d N P N
 is because they \KNOW // that . . . if RIGHT in the CENTre of the
 V w N V W c a P+ d N P d
 \MIDdle east // is⁹ the MUSlim ^\COUNtry // you got a
 N V d e N N V d
 nonsecTARIan de \MOCracy // [T2-Dc-30-31]
 e N #

Dc, like, the other readers, broke off increment 30 prior to the achievement of target state in order to produce increment 31. However, no sooner had she completed increment 31 than did she backtrack and recommence increment 30 commencing from the intermediate state where she had abandoned it. A related example is (6).

- (6) beCAUSE they -KNOW that // the ↓VAlue of -↓TERrorism //
 w n v (w) (d) (N) (P) (N)
 that the value of \TERrorism // to -THEM // \IS // ... as i was \
 w d N P+ N p n V ... [c N V
SAying // a MOment or \TWO ago // it s not ↑Simply the
 V' d N C NUM A #] (N) (V) a+ a d
 ACT of \TERror // [T2-Gc-21-22]
 N P N #

In (6) Gc suspends the completion of increment 21 in order to insert increment 22 and it is only after the completion of increment 22 that he returns to increment 21. Dmc in (7) uses a slightly different strategy when reading the text. She suspends her movement towards target state in increment 19 by inserting the suspensive subchain *as I was saying a moment or two ago* into the middle of her increment. The suspensive subchain does not discharge her obligation to produce the N element prospected by the V element *is* which is only satisfied by the production of the elements *the act of terror*. The suspensive subchain expands the existing intermediate state without moving the increment formally towards target state. The initial state which commences before the production of the first N in the following increment however, contains the information presented within the subchain, which has been presented as information the hearer would have been aware of had she/he attempted to recover the information from the existing context. Gc by presenting the elements *as I was saying a moment or two ago* as an increment projects a context where this information is news to his hearer.

- (7) because ↑THEY \KNOW // that the VAlue of \TERrorism // to
 w N V w d N P+ N P
 \↑THEM // /↑IS // as i was SAying a MOment or \↓TWO ago
 n V c n v v' d n c num a
 // it s ↑NOT Simply the ACT of \TERror // [T2-Dmc-19]
 (N) (V) a+ a d N P N #

Both examples (6) and (7) contain instances of dysfluency and the addition of the bracketing conventions in both allows an analyst to reconstruct the unfolding of an increment from initial state through intermediate states until target state is reached. Example (8) minus the intonation coding illustrates:

- (8) because they know that the value of terrorism to them is not
 w N V w d N P+N p n V a+
 → INT1 → INT2 → INT3 → INT4
 simply the act of terror
 a d N P N #
 → INT5 → TS

Example (9) illustrates a further type of dysfluency, namely where a speaker abandons an increment in progress.

- (9) NOW what HAPpened after sep\TEMber the eleventh // and this
 a w v p n ... c N
 → INT1
 ex-PLAINS // i THINK the \PREsidents policy // [T2-RF-23]
 V phr d e N #
 → INT2 → TS

RF starts to read the increment but abandons it after the three dots and then recommences increment 23. Her choice of level tone is of significance in that it shows her momentary disengagement from the communicative act of reading (see Chapter 6 for further discussion. Other readers, e.g. SN's reading of this stretch of text construed a different meaning.

- (10) ↑NOW what HAPpened after september the e/\↑LEVenth //
 a W V P N Ø #
 and this exPLAINS i \THINK // the ↑PREsidents \POLicy //
 c N V phr d e N #
 [T2-Sn-27-28]

The stretch of speech read in (10) comprises two increments with the target state in increment 27 referred to by the anaphoric element *this* functioning as the initial state of increment 28.

Of the 933 increments read by the eleven readers only two or 0.21% failed to comply with the condition that an increment must contain an instance of falling tone. Both are readings of the identical stretch of text and are presented in (11).

- (11) TErrorism brings the re\√PRIsal // the reprisal brings the
 N V d N+ d N V d
 adDITional\√HATred // and the adDITional\√HATred //
 e N+ c d e N
 BREEDS the additional\√TErrorism // and\√SO on //
 V d e N PHR
 [T2-Mh-22]

TErrorism brings the re\√PRIsal // the re↓PRIsal brings the
 N V d N+ d N V d
 ad\√DITional hatred // the adDITional hatred /BREEDS //
 e N+ d e N+ V
 the adDITional\√TErrorism // and\√SO on //
 d e N PHR
 [T2-Dmc-21]

It is noticeable that Mh strings together 5 tone units with fall-rise tone and that Dmc produces 4 fall-rise tones: her selection of a rise on the *v* element *breeds* appears to signal her announcement of the object that is bred. Both readers' tone choices indicate that they construed the chain of elements as a sequence of unspoken implications relating to the futility of the circle of violence. But the chain of elements in (11) does not achieve target state because the speakers have projected a context where the hearer's cognitive environment has not been modified. Chapter 6 provides a more extended discussion of tone meaning in increments.

5.4 Grammar Coding of the Corpus

This subsection provides examples taken from corpus which illustrate the internal workings of the chains and it evaluates how the alterations and additions suggested in Chapter 4 functioned in practice. The coding proposed proved to be inadequate and so four new categories of elements

not found in Brazil (1995) were proposed: phrases, conventions, exclamations and numerals. The first point to look at is the coding of some V elements as PHR-V.

5.4.1 PHR-V and PHR-V' elements

In Chapter 4, it was suggested that a category of PHR-V element be recognized in three cases. First, where the V-elements represented a single meaningful selection which is notated by Cobuild as a phrase. Second, where the V elements are in phase and the action represented by the second verb has been completed, and finally, where the **V-ing** pattern of the verb signals a future happening. Turning first to the issue of V-elements which appear to represent a single meaningful selection it is important to see if any supporting evidence, other than Cobuild, exists for treating them as single meaningful selections. As discussed in Chapter 1, speakers' tonality selections segment speech into information units. It is difficult to see how a single meaningful selection could be simultaneously present in two separate adjoining information units. Of the 54 V elements¹⁰ coded in agreement with Cobuild as VPHR none occurred across two tone units. Example (12) is in a sense an exception which proves the rule.

- (12) ERM // in the SENSE that you are looking . . . at ↑WHAT is
 ex p d n w n v v' p W V
 HAPpening in the \MIDdle east // and what is happening in
 V' p d N c W V V' P
 îRAQ // and /LEBanon // and \PAlestine //
 N c N c N #
 [T2-Dc-47]

Dc, unlike the other readers misconstrues the element *look at* as a v'p sequence rather than as vphr element synonymous with *consider*. Realizing her error in producing the form *looking* which signifies *directing your gaze in order to see* she paused for 1.15 seconds before continuing with her reading.

The 5 elements which were coded VPHR or V'PHR rather than as a V element followed by an A or P element are *lived through*, *preyed on*, *to come back*, *are up against*, and *look at*. The suggested coding of VPHR proved to offer semantic clarity in highlighting meaningful distinctions e.g.¹¹

- (13) because you are up against . . .

w N VPHR

- (14) because you are up against . . .

w N V A+ P

The difference in coding reflects the difference in meaning produced by the elements *are up against* in (13) and in the constructed example in (14). In the former case the meaning of the elements can be summarized as *facing a difficult problem* and in the later case they refer to the fact that you are *physically blocked by something or leaning against something*. The elements *go down* and *go back* were coded as V'A respectively rather than as VPHR in (15) and (16) to indicate that the

- (15) and go down to London

c Ø V' A+ P N

- (16) I think we've got to go back

phr N V V' V' A

meaning of the V'A elements in (15) and (16) can be paraphrased as *travel to* and *revisit*. The sequence of elements *go down* and *go back* can on occasion realize a meaning which is better captured by the coding VPHR e.g.

- (17) Crime has gone done = been reduced

V'PHR

- (18) We go back years = have known one another for years

VPHR

There were no instances of verbs in phase located in the corpus, however, examination of the published corpus in Crystal and Davy (1975) found ten instances of verbs in phase. In nine cases the verbs in phase were unambiguously found within one tone unit. (19) illustrates:

- (19) Extract 1 (
- Talking about Football*
-)

and within a \week // he's **managed to create** \↑riots //
 c p d n N V PHR-V' d° N

The coding of the elements *managed to create* as V'PHR focuses attention on the fact that the journalist created riots. *Create* carries the main semantic weight of the message in contrast to *tried to create* or *failed to create* which would not have been coded as VPHR.

The sole example where verbs in phase occurred in more than one tone unit in the Crystal and Davy corpus is:

- (20) Extract 6 (*Living in London*)
 and \EVerything seems // to get \DIRty //
 c N VPHR E

While the tonality selection suggests that *seems to get* is VV' sequence, *to get dirty* is clearly the main carrier of information which indicates that VPHR is a more appropriate coding. It is possible, however, that the coding of example (20) is no more than an artefact of an incorrect tonality division. As there is no pause between *everything* and *seems* it may be that *seems* which is neither stressed nor prominent, is a proclitic element in the second tone unit rather than an enclitic element in the initial tone unit, and thus, the tonality division should have been coded as // and \EVerything // seems to get \DIRty //. ¹²

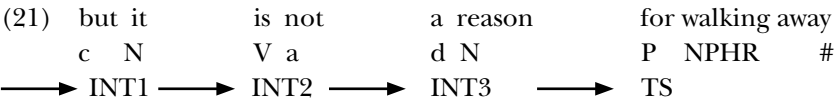
PHR-V coding was also suggested for the **V-ing** pattern when it signalled potential futurity. However, no examples were found in the corpus or in Crystal and Davy (1975) and so nothing further can be said about the coding of the **V-ing** pattern. To conclude, it has been shown that the PHR-V coding helps to make the grammar more semantically transparent in the case of elements which represent a single meaningful selection and when V elements are in phase.

5.4.2 The coding of N elements

In Chapter 4 Section 3 Brazil's coding of certain N elements, e.g. *car park*, as a pair of reduplicating N elements was criticized. It was argued that elements such as *car park* represented single lexical selections and that a more transparent as well as psychologically accurate grammar should code them as single N elements. The full list of N elements which contain more than a single orthographic word found in the corpus and coded as a single N element is as follows: *emergency services*, *climate change*, *September the 11th* on five occasions, *chain reaction* and *Middle East*. As expected all instances of

N elements containing more than a single orthographic word were found within the same tone unit.

One further element *walking away* was coded as NPHR:



Coding the element *walking away* as a NPHR rather than as an NA sequence serves not only to highlight that target state has been reached but also to highlight the negative consequences of the act of *walking away* rather than the physical act of *walking away from somewhere*.

5.4.3 PHR elements

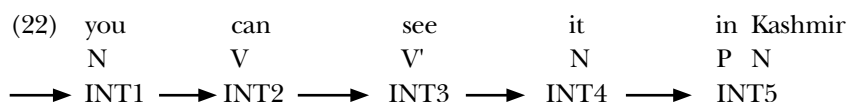
During the coding of the corpus it became clear that not every element could be usefully coded as an N, V, P, A or E element. A number of disparate elements, presented below in Table 5.3, were coded as PHR. This section considers the meaning generated by the PHR elements and how to include PHR elements within the chaining rules.

As can be seen, the elements coded as PHR represent a mixed bag semantically: some such as *I think*, *I mean* and *I'm afraid* function to limit or downplay the utterance while others such as *as best I can* and *at all* emphasise, and others such as *and so on* indicate a lack of specificity, while *for example* specifies. The elements *face to face* and *shoulder to shoulder* add colour by highlighting direct physical contact. The fact that the elements coded as PHR represent a mixed bag is of little surprise in that PHR elements all convey circumstantial meaning rather than the main action represented within the increment. Within the corpus

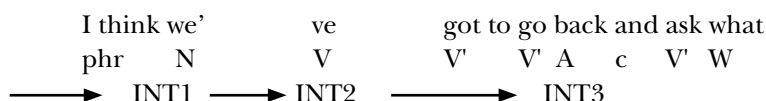
Table 5.3 A list of all elements coded as PHR

as best I can	a little bit later	whatever they do
I think (twice)	I'm afraid	I mean
thank you	for example (twice)	in other words
at all (4 times)	and so on	no matter
face to face	shoulder to shoulder	

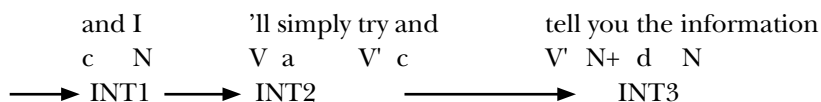
elements coded as PHR occurred at the beginning, middle or end of increments, e.g.




for example
 PHR (#)
 → TS



changed policy
V N \emptyset (#)
→ INT4 → TS



as best I can at the moment
phr P d N (#)
  TS

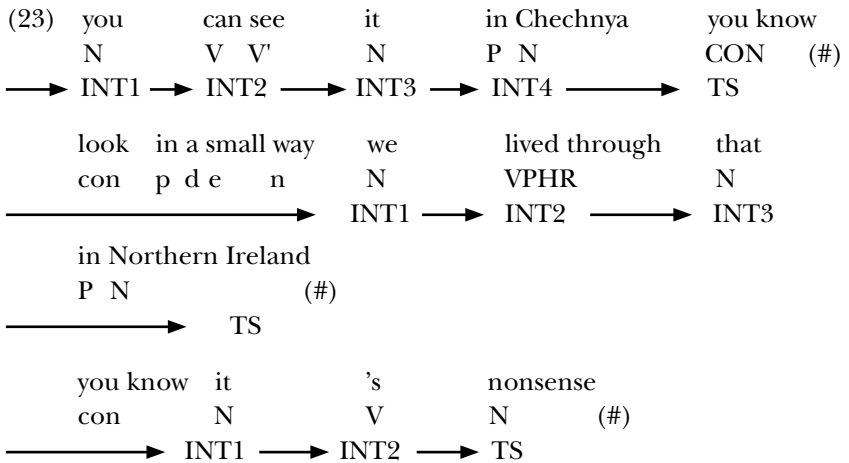
Example (22) illustrates that the elements coded as PHR can be easily integrated into the chaining rules. Figure 2.1 diagrammed the simple chaining rules and as can be seen the PHR elements operate within the chaining rules in a manner identical to A elements. In the first increment the PHR element *for example* functions like a final A element as the realization of target state. The initial elements *I think* in the second increment do not formally alter the initial state and create an intermediate state. In the final increment the elements *as best as I can* suspend and do not discharge the speaker's obligation to produce the following PN elements which realize target state.

5.4.4 Additional categories

Three further minor categories of lexical element were coded within the corpus as exclamations, conventions and numerals. In all cases, the codings

were used to highlight a semantic similarity and to make the workings of the chaining rules less opaque. The coding exclamation (ex) was used to notate lexical elements which directly signalled the speaker's feelings, that of convention (con) for non decomposable elements which are used to ensure and focus hearer attention.

Within increments exclamations such as *erm* or conventions such as *you know*, and *look* failed to create a further intermediate state and so were coded as suspensions unless the element was the final element in the increment. Example (23) illustrates:



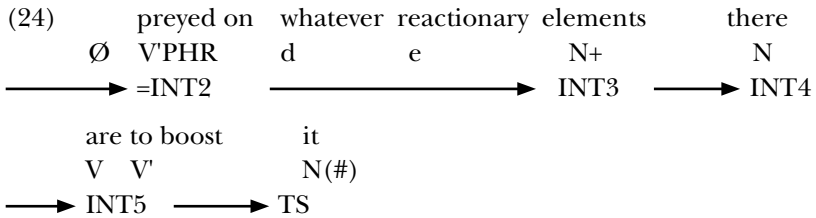
In the example the elements coded as *con* do not create a new intermediate state. The increment final *you know* is coded as if it represents the realization of target state: as the final element in the increment it represents the culmination of the projected set of modified circumstances which the speaker intended to tell the hearer.

The final minor category identified in the corpus was numeral. Quirk et al. (1985: 73) describe numeral as a minor lexical class which contains both cardinal and ordinal numbers. Examples found in the corpus are *tens*, *tens of thousands*, *two* and *one*. Within increments num elements functioned as *e elements* which suspend but do not exhaust the speaker's obligation to produce a further N element.

5.5 Ellipsis

In Chapter 4 it was argued that the chaining rules in Brazil (1995), which predict the overt realization of predictable lexical elements, are an

idealized abstraction which, in real communicative situations, is constrained by speakers' need for economy. Speakers' apprehension of their present and individual communicative needs takes precedence over grammatical form in determining the elements they produce. Example (24) demonstrates the importance to the grammar of the \emptyset symbol in detailing the movement from initial state to target state.



The \emptyset coding allows the analyst to code that the speakers' production of the V'PHR element *preyed on* signals to the hearer that the speaker, in the context of the utterance, has modified the existing set of circumstances; the increment is in the same state it would have been had the speaker produced the elided NV elements. Without the incorporation of the \emptyset symbol example (24) would be incapable of forming an increment and could represent no more than an extension of the previous increment. This would have the unfortunate consequence of making some increments too long to be of much use in contributing to the overall achievement of the speaker's purpose.

- (25) it's my intention to leave the G8 within the next couple of hours
NV d N+ V' d N P+ d e e P d° N (#)
- and go down to London
c \emptyset V' A+ P N (#)
- and get a report face to face with the police
c \emptyset V' d N phr P d N
- and the emergency services and the ministers that have been
c d N c d N W V V'
- dealing with this
V' P N(#)
- and then to return later this evening
c a \emptyset V' A d N (#)

Without the recognition that hearers are able to recover elements from the context, example (25) would have had to be coded as a single increment. It does not appear feasible, bearing in mind human memory limitations, that the interlocutors would have been able to keep track of where they were in the discourse had it represented a single increment (see Chapter 1). To summarize, ellipsis is a fact of language which enables speakers to communicate efficiently without impacting on their hearer's ability to comprehend their intended meaning. Accordingly a grammar of speech should code it if it wishes to map movement from an initial state to a target state.

5.6 Summary

The VPHR, the PHR coding, and the coding of certain N elements with more than one orthographic word as a single N element were introduced and succeeded in making the workings of the chaining rules more transparent. Three further minor classes of lexical items were coded and integrated into the grammar as suspensive elements. It was demonstrated that the introduction of the Ø symbol to code elements which were not overtly realized in the chain because they were available either in the preceding co-text or situation enables the grammar to identify numerous chains as representing successful run-throughs of the chaining rules. Finally the introduction of the bracketing convention enabled a more transparent explication of how speakers successfully moved from initial to target state, as well as serving to tidy up the message by filtering out elements which the hearers need not pay attention to.¹³

Chapter 6

Increments and Tone

Brazil (1995), as we have seen, claims that only the presence of end-falling tone projects that the speaker has altered the pre-existing state of convergence between the speaker and the hearer. End-rising tone regardless of where it occurs in the increment signals that the tone unit it is contained in does not alter the pre-existing state of speaker/hearer convergence. Increments unfold in a linear manner with target state only achieved after the production of the final elements in the increment. A potential increment must contain at least one falling tone and in the unmarked cases we would expect that the final tone unit in an increment would contain a falling tone. Crystal (1975: 34) claims that around 80 per cent of tones are neutral and that it is only what he labels unpredictable occurrences of tone: tones which are out of their expected place in an utterance which merit attention. If we follow this line of argument we can see that increment final end-rising tone is marked and *prima facie* appears to be doing more than signalling a non-telling. Table 6.1 illustrates that around 73% of increments in Text 1 and 78% of increments in Text 2 contained an end-falling tone.

While it is clear that increments which have end-falling tone are unmarked it is also clear that a significant subgroup of increments have a final non-falling tone. Of the increment final non-end-falling tones the majority are fall-rises followed by rises – see Table 6.2 for the actual numbers. Unexpectedly three instances of level tone were located in increment final position.

Table 6.1 Tone in increment final position*

	End-falling tone	Non-end-falling tone
Text 1	160 (73.1%)	59 (26.9%)
Text 2	557 (78.3%)	153 (21.7%)

* The two incomplete increments presented as example (11) in Chapter 5 have not been included in the count.

Table 6.2 Non-end-falling tones in increment final position

	Rise	Level	Fall-rise
Text 1	9	1	49
Text 2	54	2	97

Section 6.2 explores the communicative significance of rising tone in increment final position by examining Halliday's (1967) claim that utterance end-rising tones project uncertainty: the speaker signals that the hearer is the party with the greater knowledge. It goes on to consider whether increment final fall-rises consistently realize the additional communicative function of implying that something has been left unsaid. Finally it examines the communicative significance of the increment final level tones.

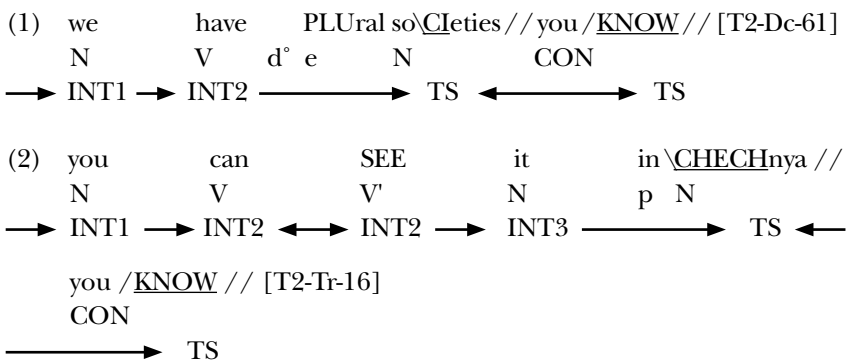
Chapter 3 described a proposal which argues that in discourse some instances of level tones which are not the result of dysfluencies are instances of used language. Brazil (1997), in contrast, classifies level tone as oblique and argues that as level tone is not sensitive to the details of a hearer's perspective it is not used language. Section 6.3 investigates level tones found in the corpus in order to examine whether any instances of level tone which labelled information as 'self evident' were present (see Tench 1997), and if they were whether they should be notated as used language.

6.1 Non-End-Falling Tone in Increment Final Position

This section first explores whether rises in increment final position functioned, within the corpus, as tones of social inclusiveness. Did they signal a deferring to the hearer? Two hundred and nine end-rising tone increments were located in the corpus which meant that 22.8 per cent of all increments were completed by a tone unit with an end-rising tone. There were 146 cases where the final tone was a fall-rise and 63 where it was a rise.

Prior to examining the communicative significance of increment final end-rising tone there must be a brief digression discussing the status of the lexical elements contained within the final end-rising tone units. Unlike this book, Brazil (1995: 214–15), does not code 'miscellaneous elements like *well*, *anyway*, and *I mean*' because such elements do not enter into the organization of chains. Using different terminology, we can say that Brazil (1995) does not code such miscellaneous elements because they do not convey experiential meaning; rather, they convey either textual or

interpersonal meaning. Fourteen increment final rises were located in the corpus attached to tone units which contained only the elements *you know*. These 14 increment final rises are dubbed *interpersonal final rises* because production of the elements which the rise attaches to does not result in the creation of a further intermediate state. Sinclair and Mauranen (2006: 73) classify such elements as interactive-oriented organizational (OI) elements. Such elements function as an expression of the speaker's attitude and are used to manage the discourse. They seek to influence or constrain the hearer's attitude and behaviour. Examples (1) and (2) provide two representative examples of an increment final interpersonal rise.



Had speaker Dc in (1) chosen to end her increment immediately after her production of *societies* she would have asserted the fact that *we have plural societies*. Yet, she chose not to do so and her choice not to do so by its mere presence has value. The double headed arrow indicates that the final tone unit containing a rising tone does not alter the fact the speaker has previously achieved target state. It indicates that the speaker projects that the hearer is to perceive the target state in a different manner. Rather than simply modifying the hearer's existing cognitive environment the speaker has projected a state of circumstances which explicitly defers to the hearer by signalling that the speaker projects her increment as referring to information which was previously part of the hearer's potential knowledge.

Similarly, in (2) Tr defers to the hearer by projecting a context in which the hearer was potentially capable of recognizing the effect of *terror in Chechnya* without him having had to produce the increment. Yet, he did produce the increment! The act of deferring serves to project the fiction that the speaker and the hearer are on an equal footing; the speaker in other words, does not have privileged information. The projection of the hearer as an intimate who shares knowledge with the speaker leads to the

illusion of a more equalitarian management of the discourse. The hearer, as an equal, technically has the right to validate the speaker's assertion and the speaker recognizes this apparent right by producing the increment final interpersonal rise. Successful communication, as Eggins and Slade (1997) remind us, rests upon the tension between establishing solidarity by confirming similarities and creating autonomy by highlighting differences through the act of telling. One of the ways a speaker can reduce tension is by projecting divergence/telling as convergence or projecting the telling as potentially inferable by the hearer.

In addition to managing the tension between telling and fostering solidarity interpersonal final rises function to manage the discourse by checking whether the hearer is following the speaker's discourse. An analysis of the Crystal and Davy (1975) corpus in O'Grady (2006) found that five out of the twenty-four interpersonal rises located were immediately followed by the back channel *m*: a response which Tench (1996: 105) states, signals hearer agreement.

All the remaining instances of increments in the corpus which ended in end-rising tone were attached to tone units which contained elements which led to the creation of a target state. Brazil (1987 and 1995) does not ascribe any additional communicative significance to end-rising tone found in increment final position: they are, he claims, simply tone units which contain information which the speaker projects as already part of the speaker/hearer state of convergence. For Brazil, the position of the end-rising tone unit within the increment is immaterial. He claims that in increment final position end-rising tone coincides with the production of elements which while informationally redundant are required syntactically to complete an appropriate chain. Other scholars, however, do ascribe specific and differing communicative functions to utterance final rises for example Cruttenden (1997: 95) who argues that utterance final rises limit or modify the previous information.

An utterance or speaker's turn¹ is not necessarily coterminous with an increment. An utterance may consist of more than a single increment, less than a single increment, or be a single increment. However, except where the speaker's utterance is either part of an asking increment or a non-final contribution to a jointly constructed telling increment, the ending of a speaker's utterance is likely to coincide with the completion of an increment.²

In order to investigate whether increment final rises function to limit or modify the information told in the increment the 49 increment final rises were divided into rises attached to a tone unit containing only adverbial elements³ and those that were attached to tone units containing nominal or verbal elements. The results are presented in Table 6.3.

Table 6.3 Correspondence between increment final rises and grammatical elements

	Text 1	Text 2	Total
TU with Adverbial Elements	5	13	18
TU with Nominal or Verbal Elements	2	26	28
TU Adverbial and Nominal/Verbal elements	2	1	3

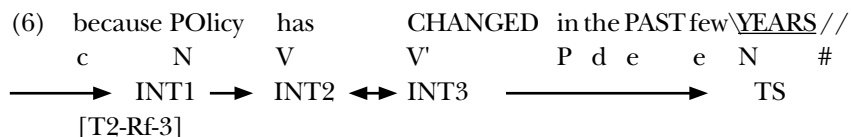
Examples (3) and (4) provide representative examples of increment final rises which coincide with tone units containing adverbial elements.

(3) it s my in[↑]TENTION to // LEAVE the g[↓]EIGHT // within
N V d N V' d N P+
→ INT1 → INT2 → INT3 ↔ INT3 → INT4 →
the NEXT couple of /HOURS // [T1-Bc-8]
d e N P N #
→ TS

(4) because[↑]POLICY has \CHANGED // in the PAST FEW /
w N V V' P d e+ e
→ INT1 → INT2 ↔ INT2 →
YEARS // [T2-Dc-3]
N (#)
→ TS

It is clear that the target state in (3) and (4) is only reached after the production of the final elements *hours* and *years* respectively. However, it is equally clear that a potential target state would have been realized had the readers finished their increments after the elements *Geight* and *changed* respectively. The addition of the final tone units in (3) and (4) qualifies the telling. The intention to leave is strengthened by the temporal qualification *in a few hours*, and the *policy which has changed is limited to that of the past few years*. Examples (5–6) illustrate another reader, Rf's different choices.

(5) it s my in[↑]TENTION to LEAVE the gEIGHT
N V d N V' d N
→ INT1 → INT2 → INT3 ↔ INT3 → INT4
within the next couple of \HOURS // [T1-Rf-8]
P+ d e N P N #
→ TS



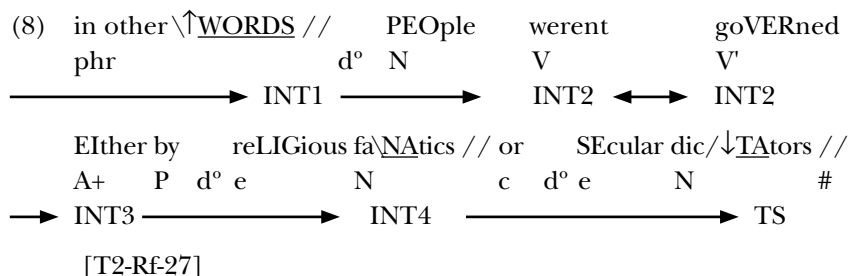
In examples (5) and (6) we see that Rf has projected a context where the entire increment is presented within one tone unit. Her placement of the tonic syllable on the final elements *hours* and *years* signals that these elements represent the focus of the increment (Halliday 1967: 24). Unlike examples (3) and (4) the telling is not qualified by the adverbial elements; it is rather culminated by their articulation. It is also clear that a difference between examples (3) and (4), and (5) and (6) is that the latter pair result in a closing down of the discourse. Rf has told and in so doing she has modified her hearer's cognitive environment while Bc and Dc have at least nominally deferred to their hearers. This point will be expanded in the following paragraphs.

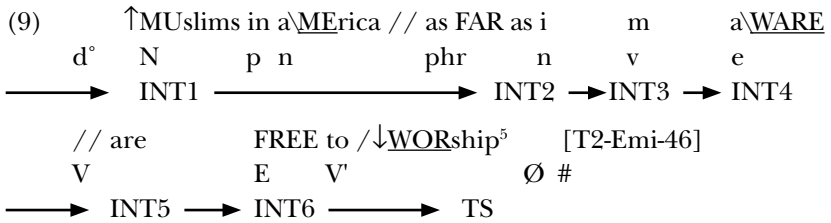
Brazil's view that the increment end-rises merely coincide with informationally redundant elements seems dubious in relation to adverbials if we consider the possible increment presented in (7).⁴

(7) // because POLicy has CHANGED in the past few years //

In this case it is clear that as the adverbial elements have been placed in post tonic position in the tail that they are projected as realizing given information (Halliday 1967). None of the 11 readers chose this option; in fact all 11 readers made the element *years* tonic indicating that for them the adverbial element did not represent informationally redundant elements which are formally required for the workings of the chains.

There were 28 increment final fall-rises which coincided with tone units containing nominal or verbal elements for example, (8) and (9).





Brazil's claim is essentially that the elements contained in the tone unit with rising tone *are free to worship and or secular dictators* are informationally neutral. In (8) there has been no prior mention of any enemy other than a Muslim terrorist enemy evoked by the previous mentions of *September 11th*, and *various Muslim countries such as Algeria, Chechnya and Palestine which are infamous for being the location of violence and terror*. Hence the mention of *secular dictators*⁶ is unexpected and by no means informationally neutral.

In example (9) the elements *are free to worship* are prefigured by the previous co-text which has asserted the existence of *propaganda which claims that America and Britain are engaged in the suppression of Islam*. Yet, it is clear that a speaker could not simply assume that a hearer would be able to infer the elements in the final tone unit of example (9). However, by presenting the elements within a tone unit containing a rising tone Emi projects a context in which the elements are inferable.

Prince (1981: 236–7) develops a tripartite taxonomy of Given-New information: new, inferable and evoked (her word for given) and identifies inferable entities as entities the speaker assumes the hearer can infer via logical reasoning or as knowledge the hearer can infer from the hearer’s general knowledge. She does not describe how speakers signal to their hearers that their propositions are inferable but increment final rises appear to have the potential to signal that speakers are projecting the content of their increments as inferable.

There were sixteen other increment final rises⁷ and each one was examined in order to see whether or not the elements it coincided with were inferable. The results are summarized in Table 6.4.

Caution is required when interpreting Table 6.4 (see endnote 6) as an analyst may read more into a situation than a reader engaged in the communicative act of reading-aloud would. But it seems that that while speakers may signal that a series of elements are inferable they also project elements which do not appear to be inferable as if they were. The effect of this rhetorical device serves not only to soften the telling but also to focus on

Table 6.4 Correspondence between increment final rises and inferred elements

Elements	Inferable	Notes
<i>that have been dealing with this</i>	Yes	Presupposed from general knowledge. What else would the ministers, police and emergency services have been doing. The anaphoric element <i>this</i> refers to the previously mentioned <i>terrorist attack</i> .
<i>that we were going to discuss</i>	Yes	Presupposed from general knowledge. Summits have agendas and agendas list items for discussion.
<i>that it possibly can</i>	No	It is not obvious that a terrorist organization will latch onto any possible cause.
<i>give it a dimension of terrorism and hatred</i>	No	It is not obvious that a terrorist organization will exploit any available cause.
<i>you can see this</i>	No	Unclear what can be seen. The element <i>this</i> is cataphoric.
<i>why I have taken the view</i>	No	Not linked to co-text and not obvious from general knowledge.
<i>in fighting this battle</i>	Yes	Presupposed from co-text.
<i>they are going to fight hard</i>	No	First mention.
<i>democracy</i>	No	First mention of the concept 'democracy'.
<i>you got a genuine democracy of the people</i>	Yes	Restatement of previous co-text.
<i>to boost it</i>	No	First mention.
<i>it had to be stopped</i>	No	First mention and not obvious from general knowledge.
<i>including killing any number of wholly innocent people</i>	?	Contestable and dependent on a particular framing of the issue.
<i>Palestine</i>	No	Not obviously linked to the previous case.
<i>grief at the loss of innocent lives</i>	?	Contestable. Not obvious that western politicians grieve for civilian deaths in other countries.
<i>and we will</i>	Yes	Restatement of previous elements. Presupposed from general knowledge.

the assumed shared social convergence existing between the speaker and the hearer. Cruttenden (1997: 163) distinguishes between what he labels 'open' tones realized by an end-rising tone movement and 'closing' tones realized by an end-falling tone movement. Closing tones project a context where the speaker has told something and that the something is not up for discussion. Open tones, on the other hand, at least nominally reach out to the hearer by deferring: the hearer is presented as being in a position to comment on the telling. The target state achieved is, in other words, one jointly shared by speaker and hearer rather than one where the speaker has overtly moved the hearer from an initial to target state.

(10) // i am ↑JUST going to make a short STATEment
 N V a V' V' d e N
→ INT1 → INT2 ↔ INT2 ↔ INT2 → INT3

to /YOU // on the ↑TERrible eVENTS // that have
P N P d N W V
→ INT4 → INT5 → INT6 → INT7 ←

happened in london earlier to /↓ DAY // [T1-Emi-1]
V' p N A+ A
→ INT7 → INT8 → INT9 → TS #

Many of the readers selected a fall-rise attached to the same elements in increment final position which indicates that some though not all of them construed the meaning of the texts in a similar manner. When reading the

Table 6.5 Elements which coincided with increment final fall-rises

Text 1	
earlier today x3	what has happened x 2
I can give you x 3	at the moment x 2
in London x4	people seriously injured x 2
and their families x2	within the next couple of hours
to return later this evening x7	we were going to discuss
which we were going to reach x4	of the effects of terrorism x4
to defeat this terrorism x4	in the environment x 2
to talk later about this x3	to impose extremism on the world x2
thank you x3	
Text 2	
at all	what changed policy x2
in the past few years x3	was September the 11th
that changed policy x2	they wanted to do x2
were truly in error x2	in different countries x3
lost their lives x3	and hatred x2
in Palestine now x2	based upon a perversion of Islam x2
but particularly terrorism to do that	a moment or two ago x3
it's not simply the act of terror x2	with it x2
and so on x3	over many many decades
I think the President's policy x2	in fighting this battle
they are going to fight hard x2	as a result of it
or secular dictators x2	you got a non-sectarian democracy x2
in such circumstances	you got a genuine democracy of the people x3
to boost it	that there was a problem in Gaza
it's a global ideology	it's tough to fight x2
at all	what is happening x3
and Palestine x2	at the loss of innocent lives
no matter how tough it is	larger and larger numbers of people x2
that's pushed at it x2	is to suppress Islam
but stay the course with it x2	Muslims in Britain are free to worship
and we will x4	it's wrong in every single reactionary thing about it

texts the readers construed their intended projected meaning by choosing from the systemic resources of the meaning making potential of the language. Figure 6.1 illustrates some of the relevant choices which led to the 156 increment final fall-rises presented in Table 6.5.

A reader when reading a stretch of text chooses if the tone unit she/he is about to read will be increment final or not. In Figure 6.1 the reader chooses to make the tone unit the final one in the increment. Increment closure is the entry condition for the choice of tone which in this example is fall-rise. It will be noted that the system is recursive in that the next tone unit produced by the reader is the entry condition for the system Increment open/Increment closure. Examples (11) and (12) illustrate.

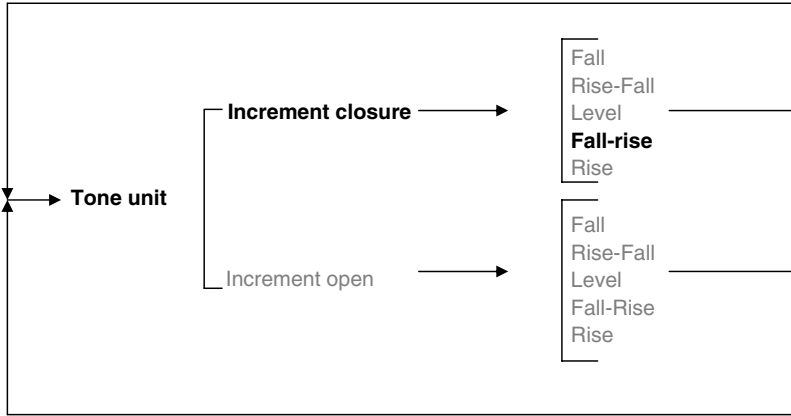


Figure 6.1 Simplified increment closure systems network*

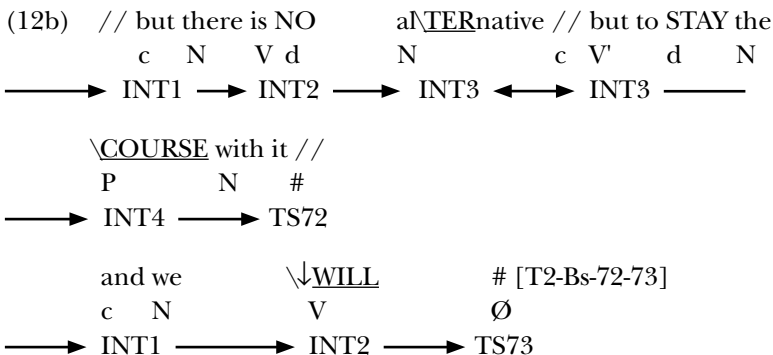
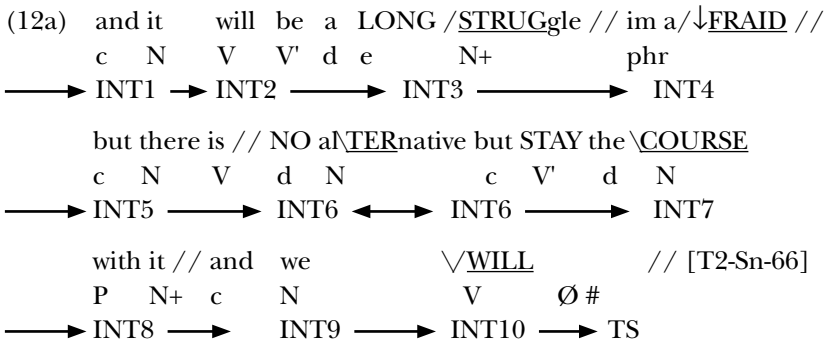
* For expository purposes this network has been simplified. In reality a reader also has to choose from the systems of tonicity and tonality as well as selecting from simultaneous lexicogrammar systems.

(11a) and to GO down to -LONdon // to GET a /REport //
 c Ø V' A+ P N V' d N
 FACE to \FACE // with the po[↑]LICE // and the e\MERgency
 phr P d N+ c d N+
 services // and the \MINisters // that HAVE been \DEALing with
 c d N+ W V V' V' P
 this // and then to re[↑]TURN later this \EVENing [T1-Rf-9]
 N c a Ø V' A d N #
 → INT11 ↔ INT11 → INT13 → TS

(11b) its my in[↑]TENTION to LEAVE the g/EIGHT // WITHin the
 NEXT COUple of \HOURS // and go DOWN to \LONdon //
 to get a re[↑]PORT // FACE to \FACE // with the po[↑]LICE // and
 the eMERgency \SERvices // and the \MINisters // that have
 been \DEALing with this // and then to re[↑]TURN \LATER //
 V' V' P N # c a Ø V' A d
 → TS8 # → INT1 → INT2
 this \EVENing // [T1-Dc-8-9]
 N #
 → TS

Dc in (11b) makes both the antepenultimate and the final tone unit realize increment closure. This contrasts with Rf who only makes her final tone unit realize an increment closure. The increment produced by Rf consists of an accumulation of information formally realized by the progression through 13 intermediate states within 8 tone units prior to achieving target state. Dc ends both of her increments with unmarked falling tone: she has projected a context where she has modified her hearer's cognitive environment by producing two acts of telling with the target state of the first telling functioning as the initial state of the second.

Rf has produced a single act of telling and her final tone unit contains a marked tone: the fall-rise. Selection of fall-rise tone like selection of rising tone actively involves the hearer in the co-construction of the increment. But unlike the rise, selection of the fall-rise does not defer to the hearer by presenting the target state as inferable. Rather it presents the target state as containing an implication which the hearer is able to infer. Projecting that the hearer is able to infer extra meaning from the target state achieved serves to foster a sense of social solidarity: only intimates can be expected to be able to infer more than has been overtly stated.



There were three unexpected instances of level tone found in increment final position.⁸ Brazil (1997: 136) in his discussion of level tone rules out the possibility of level tone occurring in final position. In fact the only scholar who unambiguously appears to describe level tone in final position is Crystal (1975: 35) who claims that the presence of level tone in final position signals the absence of emotional involvement which may, depending on the context, be interpreted as boredom, irony or sarcasm. Halliday and Greaves (2008: 114) argue that tone 3 coupled with a declarative clause in final position labels the statement as being tentative rather than assertive. However, it is not clear that what they describe as tone 3 is in fact a level tone. In earlier work e.g. Halliday (1967: 16) and Halliday (1970: 11) tone 3 is described as a low rise to mid which opposes tone 2 which is a high rise. In Halliday and Greaves (2008: 44–5) tone 3 is described as ‘level rising’. Thus, tone 3 as a category seems to include tones some of which have been classified here as rises and others as levels. Example (13) provides a representative example of an increment final tone unit with level tone.

- (13) it 's par↑TICularly bar\BAric // that this has /HAPpened //
N V A E W N V V'

on a \↑DAY // when people are \MEEting // to TRY and HELP
P d N W d° N V V' V' c V'

the PROblems of \POverty // in \↑AFrica // and the
d N P+ N P N c d

LONG TERM PROblems of \CLimate change //
e N P+ N

in the en-\VIronment // [T1-Dmc-14]
P d N #

It is clear that the target state reached after the production of the final level tone unit which contains an adverbial would not have differed much, if at all, had the speaker not produced the final tone unit. In order to investigate the meaning of Dmc's choice it is worth considering the meanings realized by the other readers. Five of them did not place the adverbial elements *in the environment* in its own tone unit. All of these readers selected the unmarked fall to realize the increment boundary. They read the stretch of speech comprising the final two units in (13) as a single increment. Of the remaining five readers one produced a fall which, coupled with a low-termination choice, projected increment closure; three produced a fall-rise, thus implying that the target state realized more than was overtly stated; and one produced a rise, which not only projected the meaning that the *problem of climate change* is limited to the *physical location of the environment* but also defers to the hearer.

By selecting level tone Dmc has chosen an option which realizes the value of none of the choices chosen by the other readers. Her choice projects an increment where the achieved target state is not presented as an unmitigated telling, a telling with an implication or a telling mitigated by an assumed deference to the hearer's cognitive environment. Thus, it appears that Dmc has refused to make a choice: she has neither told, told and implied, nor told and deferred. A local meaning might be that she projects the telling realized in the increment as one she that she does not endorse.

The final systemic option available to a speaker in Figure 6.1 is selection of an increment final rise-fall tone. Brazil (1997: 84ff.) claims that the rise-fall is a variant of the fall which a speaker selects to project dominance. By asserting dominance 'the speaker is able to make a meaning distinction that the non-dominant speaker cannot make' (ibid. 85). For Halliday 1967 and Halliday and Greaves (2008) a rise fall (their tone 5) realizes speaker commitment or intensification. The speaker projects him/herself as strongly committed to the asserted proposition. The target state realized

is one that the hearer in the speaker's judgement was not only incapable of inferring but one that the speaker overtly indicates his/her full commitment to.

There were 27 increment final rise-falls in the corpus. Examples (14a) and (14b)⁹ provide representative examples.

(14a) you can SEE it in PAlestine/
 N V V' N P N
 → INT1 → INT2 ↔ INT2 → INT3 → INT4
 \NOW // [T2-Tr-17]
 A #
 → TS

(14b) you can see it in \PAlestine //
 N V V' N P N #
 → INT1 → INT2 ↔ INT2 → INT3 → TS
 [Tc-Dmc-15]

Of the eleven readers seven produced an increment final falling tone; two, Jt and Rf, produced an increment final fall-rise. The remaining reader Bs, like Tr, produced an increment final rise-fall. In (14a) and (14b) both Tr and Dmc have realized a target state: in the pursuit of their individual communicative needs they have modified their hearer's cognitive environment by asserting that *the effects of terror and hatred can be seen in Palestine*. However, Tr alone has shown that he is fully committed to the proposition asserted by the achievement of target state. In order words, unlike Dmc, he overtly states his belief that the achieved target state is true and by so doing he positions himself within the discourse as a voice which is not prepared to listen to any contradictory opinion. The presence of the increment final rise-fall means that the hearer is informed that any attempt to argue against the truth realized by the achieved target state is likely to be perceived as face threatening and lead to a rift in the speaker/hearer social harmony.

(15a) it s the CHAIN reACtion that terror brings
 N V d N w N V
 → INT1 → INT2 → INT3 → INT4 → INT5
 ^\WITH it // [T2-Jt-19]
 P N #
 → TS

Table 6.6 Increments containing level tone units

Not engaged		Engaged			
		Self-evident	Retrospective summary	Not classified	Total
Text 1	1	13	1	1	15
Text 2	28	15	4	11	30
Total	29	28	5	12	45

the speaker recalling methods of representation that were mentioned previously in the discourse (1978: 42). The function of retrospective summary appears directed towards meeting hearers' needs. Speakers label the content of the tone unit as summarizing information previously introduced into the discourse and simultaneously signal ambivalence as to its information status.

Tench (1997: 16) argues persuasively that some instances of level tone signal that the information presented is information which a hearer is presumed to know. The assessment of information as 'routine' or 'unquestionably self-evident' appears sensitive to hearers' present informational needs and there seems no reason not to include such speech within the domain of used language.

Seventy-four increments were located in the corpus which contained level tone units. These tone units were coded as projecting that the reader was engaged or disengaged with the hearer. Table 6.6 summarizes the details.

The classification of the increments as engaged or not was based on four factors: the co-occurrence of the level tone with *conventions* and *exclamations*; the co-presence of a tone unit internal hesitation pause in the surrounding tone units; the repetition of lexical items indicating that the reader was stumbling over the words; and the tonal composition of the increment which contained the level tone unit. The term tonal composition is taken from Tench (1996) but is used here (after Pickering 2001: 238), in a slightly different way to identify speech as *direct discourse* where the speaker is sensitive to the hearer's informational needs or *oblique discourse* where the speaker is not. Direct discourse is identified by the predominance of end-rising and falling tones while oblique discourse is identified by the predominance of level tones followed by a falling tone which signals completion. Level tone units which meet any of the first three criteria or level tone units within an oblique discourse tonal composition are classified as disengaged. All other level tone units were classified as

engaged. Examples (16–18) are representative illustrations of disengaged level tone.

- (16) *-ERM // in the \SENSE // that you \LOOK at // what is*
ex p d n w n vphr W V
\HAPpening in the middle east // and WHAT is \HAPpening in
V' p d N c W V V' P
iraq // and LEbanon and \PAlestine // [T2-Bc-43]
N c N c N #

In (16) the presence of the initial tone unit with level tone signals that Bc was momentarily disengaged from satisfying a communicative need. He was instead focusing on the linguistic message as form rather than as communicative content in order to presumably interpret the reading himself so that he could project it to suit his communicative needs. The presence of the marked tonality choices on the immediately following tone unit coupled with a falling tone indicates that the speaker switched from oblique to direct discourse during the articulation of the second tone unit of example (16).

- (17) *there will be -↑TIME // to . . . to TALK \LAtter about this //*
N V V' E (p) V' A+ P N (#)
 [T2-Jt-19]

In (17) as in (16) the initial tone unit of the increment contains a level tone. However, unlike in (16) the level tone tone unit contains elements which are formally required to complete the grammatical chain. The presence of the level tone followed in the next tone unit by a repeated lexical element and a tone unit internal pause signals Jt's disengagement from the communicative context. Like Bc in (16) he is focusing on the form of the text and not on the message. It is only after the tone unit internal pause and the repetition of the element *to* that Jt re-engages with the communicative situation.

- (18) *and ↑THAT S /WHY // we HAVE the ISsue -\THERE // and THAT S*
c N V W N V d N A c N V
why the taleban . . . -\TAleban // are TRYing to COME back in
W d (N) . . . N V V' PHRV' P
af↓GHANistan // [T2-Bs-39]
N #

Example (18) contains two level tone units which signal Bs's momentary disengagement from the communicative context he is operating in. Apparently struggling to comprehend how the text he is reading fits into the context he is projecting, he finds himself unable to choose an engaged tone. The tone unit internal pause in the third tone unit indicates that it was only after the articulation of the third tone unit that Bs re-engages with the context and projects his reading as engaged in satisfying his individual communicative need.¹⁰

There were no examples of level tone realizing what Tench (1997) labelled the routine listing function. However, an examination of Crystal and Davy (1975) located 13 examples of routine listing – see O'Grady 2006 for full details. Examples (19) and (20) provide representative examples.

- (19) and they went into the -MILKing sheds // and helped him
 c N V P d e N c Ø V N
 feed the -PIGS // and all -THIS // you know we didn't \SEE
 V' d N c d N con N V V'
 the children//
 d N #

This example, which was cited by Tench (1997: 20) in support of his claim, presents the children's actions as self-evident. It is, according to the speaker, common knowledge that children on a farm holiday do such actions as *going into the milking sheds* and *helping to feed the pigs*. Similarly, in (20) the speaker presents the woman's acts of *opening the door*, *sitting in the car* and *beginning to back it very gently* as a routine list of actions performed when backing a car out of a garage. Such actions are so self evident that he does not for the moment need to consider the state of speaker/hearer common ground.

- (20) and opened the -DOOR // and she sat in the -CAR // and
 con Ø V d N c N V P d N con
 ... er ... began to -BACK // very very -GENTly // taking ... /
 Ø V V' Ø A A A V' e
GREAT \CARE you see // that she didn't do \↑ANything to this //
 con N N V V' N (P) (d)
 to this new car ... //
 P d e N #¹¹

Within the corpus as detailed by Table 6.6, 45 level tone units were found which were classified as engaged. Of these, the majority 27, while not instances of routine listing because they were not part of a list, functioned to project the information contained in the tone unit as self evident. Examples (21) and (22) illustrate:

- (21) // i am just going to ↑MAKE a SHORT -STATEment // to \YOU
 N V a V' V' d e N P N
 // on the TERrible e\VENTS // that have HAPPened in
 P d e N W V V' p
 \ LONdon // EARlier to \↓DAY // [T1-Rf-1]
 N A+ A #
- (22) i ↑THINK we ve GOT to go \BACK // and /ASK // what
 phr N V V' V' A c V' W
 CHANGED -POLicy //¹² because POLicy has CHANGED in the
 V N w N V V' P d
 PAST few \YEARS // [T2-Mh-2]
 e+ e N #

In example (21) by not selecting an end-rising or end-falling tone Rf projects the information that *the speaker was just about to make a short statement* as neither information told or information which the hearers did not need to be told. Rf (and also Tr) projected a context where they did not have to choose between a telling and a non-telling; the information is projected by them as being so self evident that they do not need to concern themselves with whether or not their hearers are already aware of it.¹³ Similarly in (22) Mh does not project a context where he needs to concern himself with the issue of whether or not *policy had changed*. The choice of an end-falling tone would have told his hearers that the policy had changed while the choice of an end-rising tone would have projected his presumption that the fact that the policy had changed was not news to his hearers.

Five further level tones were located which signal a retrospective summarizing: the speaker projects the information as having been previously introduced in the discourse but chooses not to project an assumption that the information has or has not been added to the state of speaker/hearer convergence.

- (23) because Policy has √CHANGED in the past few years // and
w d° N V V' P d e+ e N c
what CHANGED –POlicy // was sepTEMber the e√LEVenth //
w V N V N #
[T2-Bc-3]

Bc in the previous increment has told that *we've got to go back and ask what changed policy*: the proposition that *something changed policy* is part of the pre-existing co-text which forms the initial state of Bc's increment presented in (23). Yet his selection of level tone signals that he does not presume that his hearer has added this information to the state of shared speaker/hearer convergence. While it is impossible to know exactly why he chose not to label the information *and what changed policy* as part of the speaker/hearer common ground, selection of level tone is the neutral choice. It neither presumes that the hearer needs telling nor presumes convergence. It is clear that the idea that *something changed policy* is vital to the ultimate telling as the elements *policy* and *changed* are repeated four times within a stretch of speech comprising 18 words which in Bc's reading is segmented into three increments.

The remaining 13 instances of level tone were not classifiable under either of the categories described above. However, in all instances the *tonal composition* of the increments suggests that the speakers were sensitive to their hearers' communicative needs e.g.

- (24) and √YES // it –√REally is // √TOUGH // as a √REsult
c con N A V E P+ d N
of it // [T2-Emi-24]
P N #

The tonal composition indicates that Emi was engaged in a communicative act. The presence of the low key/termination – see Chapter 7 – provides further support for the view that while articulating (24) she was fully engaged in the communicative situation. However, it is not possible to know¹⁴ why she chose to select a level tone rather than an end-falling or end-rising one.

To conclude, this section has shown that while choice of level tone is a neutral option in the sense that it opposes the communicative values realized by the selection of end-falling or end-rising tone, it does not always

project disengagement from the context. It may project that information is part of a routine list or is so self evident that it does not need to be accommodated within the assumed state of speaker/hearer convergence. Speakers who project that their information neither represents a telling nor presumes a pre-existing convergence can engage in an act of communication which should be classified as used language. Recognition that speakers may employ level tone to help satisfy their communicative needs extends the descriptive power of Brazil's grammar.

6.3 Conclusion

This chapter has shown that the grammar can be made more transparent by recognizing that Brazil's original grammar underreported the communicative significance of end-rising tone. In increment-final position two distinct types of increment-final rise were identified. The first was dubbed an interpersonal rise because it coincides with elements whose production does not lead to the achievement of target state. An interpersonal rise functions as a conversation management device to ensure hearer participation by seeking to elicit a hearer response – verbal or otherwise. When an increment final rise was attached to a tone unit which contained elements required for the achievement of target state, it signalled that the speaker deferred to the hearer. The speaker labelled the information contained within the increment as inferable. The new target state was projected to be information which hearers could have worked out for themselves had sufficient time and opportunity been available to do so. By deferring speakers underlined the social convergence which they projected as existing between themselves and their hearers.

An increment final fall-rise similarly signals that the speaker defers to the hearer but it also has the potential to add the extra communicative value of implicating that something has been left unsaid which hearers using their contextual knowledge are projected to be able to infer. Finally examples from the corpus were presented which supported the proposal that some instances of level tone are used language and should accordingly be coded within the grammar. Such instances of level tone label information as so self evident that speakers do not need to accommodate them within the assumed state of speaker/hearer convergence.

Chapter 7

Key and Termination Within and Between Increments

This chapter focuses on exploring the added communicative significance realized by non-mid key and non-mid termination in increments found within the corpus. This is done in order to test whether the communicative values proposed in the earlier chapters are supported by the corpus. The chapter is divided into three sections. Using illustrative examples taken from the corpus, Sections 1 and 2 explore the communicative significance of high key and high termination in increment initial, medial and final position. Section 3 sketches the communicative significance of low key and low termination in increments, primarily by focusing on the putative relationship between increments and pitch sequences.

7.1 The Communicative Significance of High Key in Increments

Table 7.1 sets out the number of high-key choices made by the eleven readers, broken down into increment initial, medial and final position located in the corpus.¹

Two things are apparent from Table 7.1. The first is that as expected higher pitched peaks tend to coincide with the beginnings rather than the endings of increments with 80.5 per cent of high keys occurring in increment initial position. The second is that this tendency is more pronounced in Text 1 where 86.7 per cent of high keys compared with 76.8 per cent of high keys in Text 2 are in increment initial position. Furthermore in Text 1 12.2 per cent of all increments had initial high key while only 7.9 per cent of increments in Text 2 had initial high key.² This indicates as expected that the readers appeared to consider Text 1 to be more pre-planned than Text 2. Hence the readers found it easier to segment

Table 7.1 Number of high keys in increment initial, medial and final position

Reader	Text 1				Text 2			
	Initial	Medial	Final	Total	Initial	Medial	Final	Total
Bc	5	1	0	6	6	2	1	9
Bs	16	2	0	18	18	1	1	20
Dc	14	3	0	17	22	3	4	29
Dmc	11	1	1	13	17	3	1	21
Emi	8	1	0	9	12	3	1	16
Gc	5	0	0	5	11	5	0	16
Jt	14	0	0	14	15	4	2	21
Mh	8	0	0	8	14	3	0	17
Rf	10	0	1	11	15	2	4	21
Sn	8	6	0	14	8	0	3	11
Tr	10	1	0	11	21	2	3	26
Total	110	15	2	126	159	28	20	207

Text 1 into intonation paragraphs containing distinct topics than they did the less pre-planned Text 2.

Tench (1996: 28) states that, while possible, intonational paragraphing is rare in spontaneous discourse. This view is supported by the finding that while 74.6 per cent of low terminations were in increment final position only 9.4 per cent and 7.9 per cent of increments in Texts 1 and 2 contained increment final low termination.³ This indicates that the readers found the textual structure of Text 2 to be more challenging. However, regardless of the difficulties in interpreting the textual structure, each and every high key in increment initial position realizes a communicative value. The following subsection examines the communicative value realized by reader selection of high key in the corpus.

7.1.1 High key in increment initial position

The discussion in Chapter 2 Section 3 led to the formation of a proposal that increment initial high key labels the content of an increment as being contrary to the expectations previously generated by the discourse: it signals the introduction of a fresh and unexpected topic, event or character, or labels the information contained within the increment as being unanticipated, surprising or startling. All high keys located in increment initial position were examined and classified as either supporting the proposal, conflicting with the proposal or unclassifiable; the findings are summarized in Table 7.2.

It can be seen that only 13 high keys or 4.8 per cent of high keys found in the corpus did not conform to the hypothesis. Fifty high keys occurred in

Table 7.2 The communicative value of increment initial high key

	Text 1	Text 2	Total
Contrastive discourse expectations	60	77	137
Fresh topic/punctuation move	44	77	121
None of the above	7	6	13

minimal increments; increments which themselves consist of a single tone unit, and which cannot be used to establish an independent communicative value for high key in increments separate from the value established for high key in tone units. Of this subset of 50 high keys three, or 6 per cent, did not support the hypothesis. It is not in fact surprising that some instances of high keys and even some in minimal increments do not conform to the hypothesis. A high-key selection represents a speaker's projection that what he/she says contains information which the hearer will find surprising. Speakers may underestimate (whether by design or not) the state of convergence shared with their hearers or for their own rhetorical purposes present unsurprising information as surprising. This point will be revisited below.

In Text 1 of the 60 increment initial high keys which labelled the content of the increment as being contrary to the previously generated discourse expectations, nine were located in a minimal increment. Of the remaining 51 increment initial high keys, 43 were found within tone units which themselves did not contain sufficient information to realize a putative act of telling. The initial tone units contained 25 elements coterminous with relational or projecting clauses which were themselves tactically related to the immediately following clauses; ten nominal groups and eight instances where the string of elements within the tone unit was not coterminous with a syntactic category. Examples 1 to 3 illustrate:

- (1) it 's par[↑]TICularly bar\BAric // that THIS has\HAPpened // on
 N V A E W+ N V V' p
 a /DAY //when PEOple are meeting to\TRY // to HELP the
 d N W d° N V V' V' V' d
 PROblems of POverty in\AFrica // and the LONG term
 N P+ N P N c Ø d e
 ↓PROblems of \CLImate change // in the en↓VIronment //
 n P+ N P d N #

[Gc-16]

In (1) Gc, along with nine of the other readers, selects an initial high key which signals that the content of the increment is contrary to the expectations previously created by the discourse. While he has previously read aloud information on the bombing; its cost; his intention of returning to London and the determination of the leaders of the G8 to continue with their meeting, nothing has been said linking the bombing to the seemingly unrelated topics of African poverty and climate change. The implication that the bombing was somehow directed against such important topics is out of the blue and not in accord with the previously generated expectations. The initial high key projects that *the hearers will find it surprising that something is barbaric* but it is only after Gc has achieved target state that the hearers know what it is that the cataphoric *it* refers to. The initial high key signals that the hearer should pay extra attention as the target state realized by the production of the increment is not in accord with the previously generated co-text.⁴

- (2) \uparrow EACH of the COUNTRIES around the \TABLE //
 n p+ d n p d n
 has /SOME // exPERIENCE of the effECTS of \TERrorism // [Dc-13]
 V d N P+ d N P N #

In example (2) the increment initial high key which was selected by ten of the eleven readers, is contained in a tone unit which contains a nominal group. Dc's selection of high key in example (2) signals that she will read something contrary to the previously generated expectations. She will inform her hearers about something contrary to the discourse expectations that *each of the countries around that table* has done, had or is. The fact that there are countries around a table is in accord with the previous co-text but the fact that *they have had some experience with terrorism* is not. It is only when target state has been achieved that the hearer knows what it is that is projected not to be in accord with the previously generated expectations. The co-text prior to the increment initial key in example (2) has not linked the bombing with any other terrorist atrocity. Hence the statement that other countries have also suffered from similar outrages and the resulting implication that the bombing was connected to a larger international event is contrary to the expectations generated by the previous discourse.

- (3) it is the \uparrow WILL of / \uparrow ALL the // LEAders of the g\EIGHT //
 N V d N P+ d d+ N P d N

\↓HOWever // that the MEETING should cONTINUE in my
 c W+ d M V V' P d
AB↓sence // [Bs-10]
 N #

In example (3) the increment initial high key is contained in a tone unit coterminous with a string of elements which do not form a complete syntactic category. Bs' selection of the high key projects that something contrary to the discourse expectations is to be read. The initial state shared by Bs and his hearers prior to example (3) includes the information that the reader will leave the G8 meeting temporarily to come to London. This creates the expectation that the business of the meeting will be suspended in his absence but as example (3) tells us this is not in fact the case. Eight out of the ten readers chose a high key on *will* but their readings differed from Bs's in that they read the first clause of example (3) as a single tone unit.

Example (4) differs from the three examples above in that the increment initial high key is in a tone unit which itself contains information that is contrary to the expectations realized in the previous co-texts. Only three of the eleven readers did not select a high key to signal that the information in example (4) was contrary to expectations.

(4) it s ↑MY intention to LEAVE the gEIGHT //
 N V d N+ V' d N
 withIN the NEXT COUple of \uHOURS // [Jt-8]
 P+ d e e P d° N

Jt added the information contained in the second tone unit to the information contained in the first tone unit in order to achieve target state. It is not in other words the fact that *he will leave the meeting* which is projected to be contrary to discourse expectations but rather the fact *that his leaving will be within the next couple of hours* which he projects as being contrary to expectations.

In Text 2, 16 of the 77 increment initial high keys which projected that the content of the increment as being contrary to the previously generated expectations were in minimal increments. Of the remainder, 36 were located in tone units which contained sufficient information to realize a putative act of telling, e.g. example (5).

(5) and we re ↑NOT going to deFEAT this ideOLogy //
 c N V' a V' V' d N+

until we in the \WEST // go OUT with suffICient \CONfidence //
 c N p d N V A+ P+ e N
 in our OWN po↓SITion [Jt-56]
 p e+ e+ N #

As in example (4) above, Jt adds to the content of the initial tone unit until target state has been achieved. The initial high key does not project as surprising the fact that *the ideology cannot be defeated*. It projects that fact that *it is only until we in the West go out with sufficient confidence in our own position that the ideology is going to be defeated* is information which the hearer will find contrary to the discourse expectations. Somewhat surprisingly seven readers did not select high key, indicating their projection that the content of example (5) was not contrary to the previously created discourse expectations.

The remaining 25 increment initial high keys which signalled that the content of the increment was contrary to the previously generated discourse expectations were as follows. Five were in tone units which were coterminous with relational or projecting clauses; five in tone units which were nominal groups; ten in tone units which were not coterminous with any syntactic unit and five were in tone units which contained circumstantial elements e.g. example (6).

- (6) but ↑ACTually be\FORE september the eleventh //
 c a+ a n
 this GLObal \MOVEment // with a GLObal ide\OLogy //
 d e N p d e n
 was alREADY in BEING . . . in ↓\BEING // [Tr-6]
 V A+ (P) (N) P N #

The initial state prior to example (6) contains the information that *policy changed as a result of the September 11th attacks*. There is nothing in the prior co-text which creates the expectation that Tr will refer to a time frame prior to September the 11th. His initial high key projects that he will present information contrary to expectations.⁵ It is only, however, when the target state has been achieved that the hearer knows that *the global movement with the global ideology pre-existed September the 11th* and can infer that the speaker projects a surprising modification of the state of convergence; namely that it would have been better had policy changed prior to September the 11th.

The other major discourse function projected by increment initial high key was that the speaker projected the introduction of a new topic. In Text 1 there were 44 increment high keys which projected the introduction of a fresh – though not necessarily an unexpected – topic to the discourse. Four of the high keys were in minimal increments. Of the remaining 40, 20 were found in tone units coterminous with either relational or projecting clauses, 6 were coterminous with nominal groups and 14 were coterminous with elements which contained sufficient information to realize a putative act of telling. The position for Text 2 was similar. Seventeen of the 77 initial high keys were in minimal increments, 26 were in tone units coterminous with relational or projecting clauses, 6 with nominal groups, 3 were coterminous with elements which did not form a syntactic category. One was coterminous with circumstantial elements and 24 were coterminous with elements which contained sufficient information to realize a putative act of telling. Examples 7 to 10 illustrate.

- (7) i Il simply ↑TRY and tell you the infor\MAtion //
 N V e V' c Ø V' N+ d N
 as BEST as i \CAN // at the ↓MOment // [T1-Mh-3]
 PHR P d N #

The increment in example (7) has as an initial state information that *there is a limit to the information that the speaker can give about the terrible bombing*. Prior to Mh's production of the increment he and his hearers share a cognitive environment where they know that the following increments will contain information about the bombings. Example (7) is in full accord with these expectations. Mh's selection of the initial high key⁶ signals his introduction of a fresh topic namely the fact that *he will try to tell the information as best he can at the moment*. The achieved target information projects a convergence which implies that while the speaker's words are in good faith they are to be taken as provisional.

Likewise, the topic of September 11th is part of the previous co-text which forms the initial state of the increment presented in example (8). Sn's selection of a high key projects that she is introducing a new though not unexpected topic into the discourse. The previous discourse has focused on the results after September 11th. Sn's high key signals her switch in discourse focus to events prior to September 11th. Her selection of high key informs her hearer that her discourse move represents a significant change of topic which she goes on develop in her immediately following eleven increments. Six readers – but not Tony Blair – did not select a high

key and, thus, their readings did not help the hearer by signalling the change in discourse focus.

- (8) ↑sepTEMber the eLEVenTh was the culMINation //
 N V d N
 of what they WANTED to \DO // [T2-Sn-6]
 p w+ N V V' Ø #

Tr's production of example (9) restates and expands the target state achieved in the immediately previous context; the content of increment (9) is not contrary to the previously generated discourse expectations. Tr's selection of initial high key projects a context where his hearer is explicitly made aware of the significance of the restatement. He signals that the expansion realizes a change in topic from the significance of how the countries are to be governed to the significance of what a new form of governance means. He continues the new topic for a further eight increments. The other readers did not select high key and thus projected a context where the distinction between how the countries are to governed and the significance of the new form of governance is presented as a single topic with the second point elaborating the first.

- (9) in ↑OTHer \WORDS // PEOPle werent GOVerned even . . . //
 phr N V V' (A)
 EiTher by reLIGious faNAtics or SECular dic\TAtors // [T2-Tr-33]
 A+ P d° e N c d° e N #
- (10) ↑BRItain s joined with a\MERica //
 N V V' P+ N
 in the supPRESsion of \ISlam // [T2-Dc-57]
 P+ d N P N #

In example (10) Dc's selection of high key does not appear to signal information contrary to the previously generated discourse expectations but instead functions to introduce a new topic. It is not only America which has falsely been accused of suppression of Islam but also Britain. In her next four increments Dc illustrates why the accusation is false. All of the other readers with the exception of Emi do not select high key and thus, project a context where it has been previously understood that Britain as well as America has been falsely accused. Not surprisingly, this was also the meaning that Tony Blair construed.

Thirteen examples were found where the increment initial high key was in an increment which did not seem to support the hypothesis. Seven of the examples were in Text 1 and six in Text 2. Of the six Text 2 high keys three were in minimal increments. Examples (11) and (12) illustrate.

- (11) just as it is \uparrow REASONably \CLEAR // that this . . .
 a w N V A E W+ (N) . . .
 this is a TERRORist at \TACK // or a SERIES of TERRORist
 N V d e N c d n P e
 at \TACKS // [T1-Rf-16]
 N #

- (12) you got a \uparrow GENuine deMOCRacy of the \PEOPLE // [T2-Bs-35]
 N V d e N P d N #

Rf, along with six of the other readers,⁷ chose an increment initial high key in example (11) despite the fact that the content of the increment is in full accord with the expectations previously generated by the discourse. The high key in (11) does not signal the introduction of a new topic into the discourse; the following text summarizes but does not expand on the target state achieved prior to the production of example (11). Rf's selection of high key may project a context where she signals to her hearer that they are to treat example (11) as information which is either contrary to expectations or as signalling a new topic. By so doing she may be attempting to highlight the significance of the information contained within the increment towards the achievement of her ultimate telling. However, it is more likely that the high key on *reasonably* functions to particularize the lexical sense realized by the production of the adverbial element *reasonably*. Rf projects a context where the choice of *reasonably* projects an existential paradigm consisting of two lexical senses; *reasonably* which is opposed to all other possible senses available in the context (Brazil 1997:45). Rf signals that her labelling of what has occurred as *a terrorist attack or a series of terrorist attack* is the only credible way to categorize the bombings.

In example (12) Bs's selection of increment initial high key on an increment which is neither contrary to the previous expectations nor a fresh topic appears to be an instance of a particularizing key. *Genuine* represents the only sense selection which Bs can use to describe *the democracy of the people*. As Bs was the sole reader to select a high key on *genuine* his reading differs from the others in that he alone adds the nuance that *genuine is the only label*

which can describe the democracy of the people to the target state achieved by the production of example (12).

To conclude this subsection it has been shown that increment initial high key tends to label an increment as being contrary to the previously generated expectations. Ninety-five per cent of increment initial high keys in Texts 1 and 2 project a context where the content of the increment is contrary to the previously generated discourse expectations or signal the introduction of a fresh topic into the discourse. We have seen that increment initial high keys may realize the independent communicative value of particularizing a particular lexical sense.

7.1.2 High key in non-increment initial position

This sub-section explores the communicative significance of high key in non-increment initial position. According to Brazil (1997) high key serves to label a tone unit as contrary to the previously generated expectations and/or to particularize a lexical sense selection by presenting the lexical item as a selection from an existential paradigm which consists of two members; the lexical item opposed to all other conceivable senses which could have been selected. Table 7.3 details the high keys which were found in non-increment initial position.⁸

The communicative value of all 65 examples of non-increment initial high keys was examined in order to investigate whether each individual high key operated in a domain larger than the tone unit. The findings are summarized in Table 7.4.

Table 7.3 Non-increment initial high key

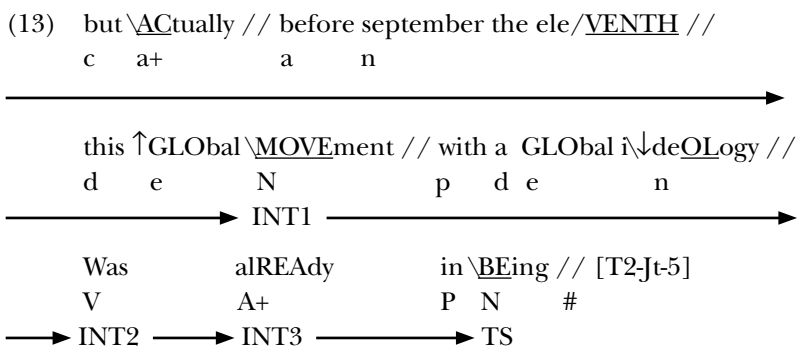
	Text 1	Text 2	Total
Medial high key	15	28	43
Final high key	2	20	22
Total	17	48	65

Table 7.4 The communicative value of non-increment initial high key

	Text 1			Text 2		
	TU contrary to expectations	Particularizing key	Other	TU contrary to expectations	Particularizing key	Other
Medial	1	13	1	7	13	8
Final	2	0	0	16	4	0

The most striking findings are that the majority of medial high keys are particularizing and that one high key in Text 1 and eight in Text 2 were classified as realizing a communicative value which neither labelled the content of a tone unit as contrary to the previously generated discourse expectations nor particularized a lexical selection. In other words, they functioned in a domain intermediate between increment and tone unit. Examples (13) to (15) illustrate that the extent of information projected as being contrary to the discourse expectations is dependent on the interaction of intonation, the lexicogrammar and the co-text.

In example (13), while the lack of an increment initial high key signals that the content of the entire increment is not projected as being contrary to expectations, Jt's lexical and tonal selections prior to the high key indicate that he projected his hearer would find the substantive content of the increment contrary to expectations. The elements *but actually before September the eleventh* are suspensive and do not lead to the modification of the initial state which Jt projected is modified only after the production of the increment initial nominal element *this global movement*. In other words, Jt projects a context in which all the information which modifies the state of speaker/hearer convergence is contrary to the previously generated discourse expectations.



In example (14) Sn produces an initial tone unit which, had it been accompanied by end-falling tone, would have represented a minimal increment.⁹ The high key in the second tone unit would have been increment initial. Yet, Sn has chosen to project a content in which the initial tone unit does not realize a target state. Her increment contains two distinct information foci and Sn signals that the second alone is contrary to the previously generated discourse expectations.

- (14) there will be more TIME to TALK about . . . to TALK
 N V V' d° e N (V') (p) . . . V'
 √\LATER about this//
 A P N
 it s im↑PORTant how\EVER // that those enGAGED in\TERRORism //
 N V E c W+ N V' p N
 REALize that our determiNATION // to deFEND our \VALUES // and
 V W+ d N+ V' p N c
 our WAY of \LIFE // is ↑GREATER than their determi\↑NATION //
 d N V E W+ d N+
 to cause ↑DEATH and de\↑STRUCTion // to INNocent\PEOPLE //
 V' N c N P+ e N
 in a deSIRE to imPOSE ex\TREMism // on the \WORLD //
 P+ d N V' N P d N #
 [T2-Sn-19]

There are two further high keys contained within example (14) which function to particularize the lexical items they are attached to.¹⁰ The reader is told that no other lexical senses are available in the discourse context other than *greater* and *death*. Sn projects an existential opposition between these items and all other items which were available in the context. The local meaning of the two particularized keys is that the words they are attached to are given extra weight; the hearer is left in no doubt as to whose determination is projected as being stronger and what it is that they are determined to cause.

- (15) and if there s any mis\TAKE // that s ever MADE
 c c N V d N W+ V a V'
 in these √\CIRCumstances //
 P d N
 it s as ↑IF PEOPLE are sur\PRISED // that it s TOUGH
 N V a c d° N V E W+ N V e
 to fit . . . \FIGHT // [T2-Mh-35]
 (V') . . . V' Ø #

In example (15) the string of elements prior to the medial high key does not represent a telling; the discourse expectations require that the speaker state what the mistake was. Mh packages the content of his increment into two components: the first which introduces the mistake and the second which details it. Only the details of the mistake are presented as being contrary to the previously generated expectations. This results in a local meaning where Mh projects a context where the difficulty of the fight is emphasized.

Of the remaining medial particularizing keys (those which do not follow an earlier high key see endnote 10) four are of special interest in that the high key is not attached to the onset, e.g. (16).¹¹

- (16) and ALL the \LEAders // as they will \INDicate
 c d d N w n+ v v'
 // a little bit /↓LAter //
 d e n a
 SHARE our com↑PLETE reso\LUTION // to deFEAT this
 V d e N V' d
 \TERrorism // [T1-Sn-15]
 N #

In example (16) Sn's selection of particularizing high key on the prominent but non-onset item *complete* projects a context where the extent of *our resolution* is further emphasized; it is *complete* and no other lexical sense can be used in the context to define its extent.

There were 23 final high keys which conformed to the hypothesis and either projected the content of the increment final tone unit as contrary to expectations or particularized a lexical sense e.g. (17) and (18). In (17) Tr projects the fact that *the progress had to be stopped* is contrary to the previously generated discourse expectations. The previous co-text has produced a target state prior to example (17) where the hearer has been told that the *global movement* thrives in undemocratic environments full of reactionary elements. Nothing, however, has been previously said about Israel and Palestine. By projecting a context where the hearer is told that he/she will find it contrary to expectations that *the global movement had to stop progress in Israel and Palestine* as part of its campaign Tr implies a context where the hearer is invited to consider that contrary to what might have been expected there are not a number of unrelated independent terrorist events but only a single overarching existential threat.

- (17) that is why the -MOment // it -LOOKED as if //
 N V W+ d N+ N V a c
 you could get PROgress in ISrael and \/PAlestine //
 N V V' N+ P N c N
 it had to \uparrow BE \/STOPped // [T2-Tr-39]
 N V V' V' #

By contrast in (18) the final high key instantiates the context *the president and no-one else*. The local meaning realized by the particularized key appears in the context to connote the President as a firm and decisive leader.

- (18) and this exPLAINS i \/THINK // the \uparrow PREsidents \/POLicy //
 c N V con d e N #
 [T2-Sn-28]

To sum up, the evidence from the corpus suggests that high key in increment medial position may label the content of more than a single tone unit as contrary to the previously generated expectations. The extent of the information projected as contrastive depends on the interaction between the lexicogrammar, the co-text and the intonation. Increment medial high key may also function as a particularizing key. When an increment medial high key is preceded within the increment by a further high key it functions as a particularizing key. A further type of particularizing key was identified where the step up in pitch occurred on a prominent syllable other than the onset. Increment final high keys function to either particularize a particular lexical sense or to project the content of a tone unit as contrary to the previously generated discourse expectations.

7.2 The Communicative Significance of High Termination in Increments

Table 7.5 shows that there were a 101 instances of high termination within the corpus.¹² Section 7.2.1 explores the communicative significance of high termination in increment final position and section 7.2.2 examines the communicative significance of non-final high-termination selections. Brazil (1997) argues that high termination realizes the communicative value of inviting adjudication of the content of the tone unit. The proposal here is that high termination, in increment final position, invites adjudication of

Table 7.5 Number of high terminations in increment initial, medial and final position

Reader	Text 1				Text 2			
	Initial	Medial	Final	Total	Initial	Medial	Final	Total
Bc	3	0	0	3	2	0	0	2
Bs	2	1	0	3	4	3	5	12
Dc	1	1	0	2	0	1	4	5
Dmc	1	1	0	2	2	1	7	10
Emi	0	1	0	1	1	0	2	3
Gc	1	1	1	3	3	1	2	6
Jt	0	0	0	0	0	1	1	2
Mh	2	0	0	2	0	0	2	2
Rf	0	0	2	2	3	1	1	5
Sn	0	2	0	2	4	6	16	26
Tr	0	0	0	0	1	2	5	8
Total	10	7	3	20	20	16	45	81

the entire increment while high termination in any other position invites adjudication of the tone unit which contains the high termination.

Prior to commencing the investigation it is important to identify more precisely what is meant by the term *inviting adjudication*. Brazil (1997: 52–61) and Brazil, Coulthard and Johns (1980: 75–9) initially introduced the communicative value realized by high-termination choices as inviting an adjudicative or evaluative high key yes/no response. In other words, the hearer is invited to produce a verbal response judging: *yes the speaker is right or no the speaker is wrong*. However, while Brazil (1997: 56) is probably correct to claim that:

It seems, in fact, that there are probably no utterance types that could not be responded to with *yes* or *no*, given appropriate discourse conditions.

he is clearly correct in recognizing that the label *invitation to adjudicate* is inappropriately precise (ibid. 59). Many utterances do not lend themselves to adjudication. In (19) taken from O’Grady (2006: 186)¹³ the speaker produces an increment final high termination, but it is clear that he is not inviting the hearer to adjudicate if his summary of the plot of the novel *Scoop* is right or wrong.

- (19) and within a \vee WEEK // he’s managed to create \vee RIOTS //
 c p d n N V PHR-V’ d° N #

Instead it seems safer to regard the high termination as seeking *active hearer intervention*; it invites the hearer to be active in contrast with a mid termination selection which signals an expectation that the hearer will listen passively and not exercise an independent judgement. In (19) the high termination presents the proposition expressed as information which the speaker does not expect the hearer to passively accept. He presents the fact that *within a week the journalist managed to create riots* as information which his hearer may have some difficulty in accommodating within his world view. The high termination anticipates a high-key contrastive reply, i.e. an overt response that the proposition was contrary to the previously generated expectations. In fact, such an expectation of a high-key response is notional and as Brazil (ibid. 60) reminds us, active hearer intervention in practice incorporates a range of activities from verbal responses to silent head nods.

The discussion above has shown that the communicative value realized by high termination is not easy to gloss. The label ‘invitation to adjudicate’, while capable of explaining the communicative value of many high terminations, is for other high terminations inappropriately precise. A looser gloss of ‘inviting active hearer intervention’ seems more appropriate to cover the values realized by all high terminations.

7.2.1 High termination in increment final position

Figures 7.1 and 7.2 illustrate that there is little difference between the co-occurrence between tone and increment final position and between the co-occurrence of tone and increment final high termination. In other words, there does not appear to be a tendency for high-termination choices to favour a particular tone: though there is a slight increase in the

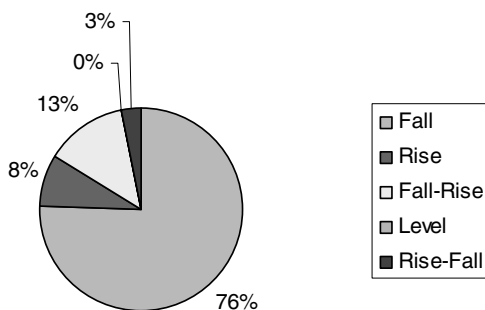


FIGURE 7.1 The co-occurrence of tone and increment final position

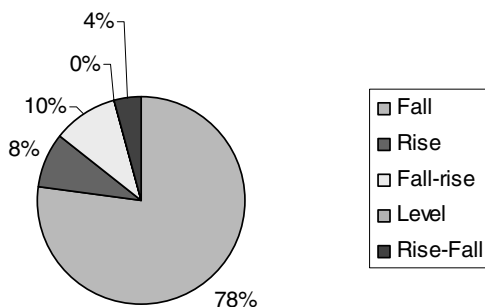


FIGURE 7.2 The co-occurrence of tone and increment final high termination

percentage of end-falling, and a decrease in the percentage of fall-rises which co-occur with increment final high termination compared to their distribution in final position across the corpus.

There are 48 high terminations in increment final position all of which, it is proposed, realize the communicative value of inviting active hearer intervention of the proposition expressed by the entire increment. Of the 48 high terminations, 17 (35.4 per cent) were found in increments coterminous with tone units which cannot be used to establish an independent communicative value for increment final high termination. Example (20) consists of an increment which is coterminous in extent with three tone units and so illustrates the communicative value realized by increment final high termination:

- (20) so they rea-LIZED // well THERE S a possi[↑]^/BILity now //
 c N V a N V d N+ A
 we can set the LEbanon against \[↑]ISrael now // [T2-Sn-40]
 N V V' d N P N A #

The initial state prior to the production of example (20) projects a state of speaker/hearer convergence where Sn has described an existential terrorist threat and provided examples of the threat and illustrated its injurious consequences. Increment 20 tells *that the terrorists have realized that there is a possibility that they can ferment trouble between Lebanon and Israel*. This is highly significant information for it provides further evidence of the danger faced and implies that the myriad of terrorist problems ultimately emanate from the same source. It is clear from the content of the increment that Sn is not inviting an adjudicative yes or no. Rather, she appears

to be inviting her hearer to consider the significance of what she presents as the surprising danger that international terrorists have the ability to set nation against nation in the achievement of their nefarious ends. Her termination choice anticipates a notional high-key contrastive response indicating that she presents the proposition, expressed in example (20), as likely to be contrary to her hearer's expectations.

A similar example is found in (21) where again the high termination does not invite the hearer to respond with an adjudicative high key yes or no. Bs is not asking his hearer to adjudicate whether or not *Muslims in America are free to worship* but rather is asking the hearer to consider the significance of the fact that *they are free to worship*!

- (21) MUslims in a\MErica // as FAR as i m a\WARE // are FREE
 N+ p n aphr n v e V E
 to\↑WORship // [T2-Bs-61]
 V' #

The increment final high termination anticipates a notational contrastive high-key response which indicates that Bs projects a context where his hearer will find the target state achieved after production of example (21) contrary to the previously generated discourse expectations¹⁴ which have reported the *propaganda that America's purpose is to suppress Islam*. The hearers are invited to produce an active response of one kind or another to signal that they are successfully following the speaker's narrative and integrating it into their individual world views.

Monologue precludes an overt verbal response but hearers are free to signal their engagement through non-verbal means such as head nods, smiles or raised eyebrows. Goodwin (2003: 23ff.) describes such non-verbal gestures as 'symbiotic', and argues that interlocutors make use of them in co-constructing discourse. Hearers are not passive and their production of symbiotic gestures plays a supporting role in the co-construction of the discourse. O'Grady (2006: 188–9) found in a re-interpretation of the conversational corpus reported in Crystal and Davy that there was only an active verbal response following 16.6 per cent of increment final high terminations and that none of the active verbal responses took the form of a high key adjudicative yes or no, or words carrying the same meaning. If Goodwin is correct, and the evidence appears to indicate that he is, the hearers must have adjudicated through non-verbal means.

Increment final high termination invites the hearer to assist the speaker by playing a non-passive and supportive role in jointly constructing the

discourse which, depending on the circumstances, may range from active verbal adjudication to non-verbal gestures. Speakers require such intervention in order to reassure themselves that their view of the state of shared speaker/hearer understanding is correct and that the realization of their increment resulted in the achievement of a satisfactory target state.

In the corpus 52.5 per cent of the instances of high termination identified within the corpus occurred at positions within the increment other than increment final and the next sub-section shows how such instances of high termination realize communicative value within the increment.

7.2.2 High termination in other positions within the increment

Brazil (1995:13) observes that speech is characteristically produced element by element, an observation that implies that it is produced tone unit by tone unit. Prior to the production of an increment the interlocutors are at an initial state, a term which, as we have seen, does not imply a blank state but rather refers to the amount of convergence between the interlocutors' assumptions. It is a state of affairs largely created by the prior discourse; the interlocutors' common discourse history; and their previous individual experiences as members of the same speech community. To illustrate, prior to the production of the initial tone unit in (22) Mh has told that there was a terrorist attack in London which had resulted in an unknown number of casualties. The hearer has further been told that at the time of the statement that the situation is confused and that no complete conclusions can as of yet be drawn.

- (22) and our THOUGHTS and \↑PRAyers //
 c d N c d° N
 of\COURSE // are with the VICtims and their\↓FAmilies //
 a V P d N c d N #
 [T1-Mh-6]

The increment initial high termination projects a context which invites hearers to actively consider the content of the tone unit. They know that the chain can only achieve target state through the production of further VN, VA or VE elements, etc. They are being invited to make an active intervention prior to a point they recognize as the potential completion of an increment. The increment initial high termination invites them to focus on the importance of the content of the initial tone unit which serves to foster

a sense of unity between the interlocutors. The projection of unity which serves to distinguish *us* from *them* proves to be central to the achievement of the ultimate telling realized by Text 1. Thus, the hearer is advised to actively note the significance of *our thoughts and prayers* and to relate it to the target state achieved after the production of example (22).

Example (23) illustrates an instance where the increment final termination choice is mid which signals that Jt expects concurrence with the proposition expressed within the increment; the speaker does not invite active hearer intervention. He does not invite his hearers to exercise any independent judgement, but instead signals an expectation of passivity. Within (23), however, there is a high termination in increment medial position.

- (23) and IF there s any MIstake that s Ever \MADE //
 c c N V d N W+ V a V'
 in these \CIRcumstances //
 P d N
 it s as if PEOple are sur\↑PRISED // that it s
 N V a c d° N V E W+ N V
 TOUGH . . . to \FIGHT // [T2-Jt-38]
 e . . . V' Ø #

Prior to example (23) Jt has projected a context where the initial state includes speaker/hearer convergence of the existential danger posed by terrorism and the fact that democracy is inimical to terrorism. He expands the state of convergence by producing an increment which reaches a target state he projects as non-controversial. In the second tone unit he asks the hearers to actively consider the proposition that *it's as if people are surprised*. However, as he has not reached target state the hearers are not yet in a position to respond to his invitation. The increment non-final high termination signals that the hearers are to make a mental note of the fact that *it's as if people are surprised* is information crucial to the subsequent achievement of target state. By asking the hearers to give active consideration to the proposition that *it's as if people are surprised* Jt appears to attempt to reinforce in the hearers' minds the need for all of us to fully realize the danger of the threat faced.

Example (20), reprinted as (24), illustrates how non-final high termination, located within an increment with final high termination, adds communicative value.

- (24) so they rea-LIZED // well THERE S a possi[↑]/_^BILity now //
 c N V a N V d N+ a
 we can set the LEbanon against\[↑]ISrael now // [Sn-40]
 N V V' d N P N A #

The high termination, prior to the increment final high termination, invites the hearer to actively consider the proposition contained within the tone unit it is in. Sn invites the hearer to first give active consideration to the proposition that *there's a possibility now*. The presence of the non-final high termination adds force to the increment by highlighting *the possibility of something* which must be considered before the hearer is in a position to form an independent judgement of the proposition expressed by the entire increment. Had all the non-final termination choices been mid, the utterance produced would neither have highlighted as explicitly the existence of the possibility nor invited the hearers to make a mental note of the existence of the possibility before inviting consideration of the proposition expressed by the increment. The local meaning generated by the increment medial high termination is to make the possibility more real and by so doing project a target state where the assumed speaker/hearer state of convergence contains an awareness of the very real danger faced.

7.2.3 Simultaneous selection of high-key/high-termination

The purpose of this sub-section is not to re-investigate the communicative values established above for high key and high termination in increment initial, medial and final positions. Instead, it examines if the position of the high key/termination in the increment tends to determine whether high-key or high-termination values predominate. As it is not possible to test for the presence or absence of a high termination value¹⁵ this section in practice can only examine whether high-key values appear to be present in minimal tonic segments and co-exist with the default high-termination value. Table 7.6 lists the high key/terminations located in the corpus. It was found that 52.4 per cent of high keys/terminations occur in initial position, 23.4 per cent in medial position and 24.2 per cent in increment final position. The tendency for readers' high key/terminations to occur in initial position suggests that increment initial high key/terminations may have more of a tendency to project high-key values than high key/terminations in final position with medial high key/terminations occupying an intermediate status.

Table 7.7 details the communicative value of increment initial high key/termination.

Table 7.6 Number of high keys/terminations in increment initial, medial and final position

Reader	Text 1				Text 2			
	Initial	Medial	Final	Total	Initial	Medial	Final	Total
Bc	4	0	0	4	3	1	1	5
Bs	0	1	1	2	11	1	4	16
Dc	2	0	0	2	5	3	2	10
Dmc	0	0	0	0	2	4	5	11
Emi	2	0	0	2	7	2	1	10
Gc	1	0	0	1	4	1	3	8
Jt	0	2	0	2	3	4	4	11
Mh	1	0	0	1	2	3	2	7
Rf	0	0	1	1	8	0	0	9
Sn	1	0	0	1	4	5	3	12
Tr	0	0	0	0	5	3	1	9
Total	11	3	2	16	54	26	26	109

Table 7.7 The communicative value of increment initial high key/termination

	Contrary to discourse expectations	Particularizing	Neither contrary nor particularizing	Unclassifiable	Total*
Text 1	6	4	1	1	13
Text 2	29	11	18	2	60
Total	35	15	19	3	73

* The totals in Tables 7.7, 7.8 and 7.9 do not match the total for high key/terminations presented in Table 7.6 because some high key/terminations have been double counted in Tables 7.7, 7.8 and 7.9. This has been done where the high key/termination has realized a value of projecting the content of the increment as contrary to expectations and has concomitantly particularized a lexical item.

Table 7.7 shows that increment initial high key/termination may realize an independent high-key value which co-exists with the default high-termination value. This independent value may signal that information in the increment is contrary to the previously generated discourse expectations and/or that the lexical item it is attached to represents a particularized selection. Three of the 65 instances of high key/termination are, because of lack of prior context, impossible to classify, e.g. (25):

(25) // i dont\↑THINK // -ERM // \ACTually // that it is
n v v' ex a W+ N V
Anything to /↑DO //
w V'
with a LOSS of aMERican INfluence at\↑ALL // [T2-Sn-1]
p d N P e N APhR #

As there is no text prior to (25) there are no prior discourse expectations which an analyst can classify the increment as being contrary to. Sn's selection of prominence on *think* rather than on *don't* or *I* indicates that she does not project a context where her selection of initial high key termination particularizes (cf. example (27) below). Instead the high key/termination signals to the hearer that some kind of active intervention is required perhaps no more than making a mental note that Sn has started to speak!

Thirty-five of the remaining increment initial high key/terminations appear to label the increment as being contrary to the previously generated expectations, e.g.

- (26) but \↑ACTually // you -KNOW // this is ↑PRObably
 c a con N V a
 where the POlicy makers
 w+ d N+ N+
 such as \MYself // were TRUly in \ERRor // [T2-Rf-7]
 p a n V A+ P N #

Prior to increment (26) Rf has described a world where the September the 11th attacks were the culmination of what the terrorists wished to do and has stated that the terrorist attacks caused policy to change. Nothing however, has been said which would lead a hearer to expect that the realization of (26) will result in a target state where the state of speaker/hearer convergence includes acknowledgement of past policy errors prior to the September 11th attacks.

In example (27) the initial high key/termination projects that the target state which will be achieved by the production of the increment is contrary to the previously generated discourse expectations.

- (27) and i ↑\DONT dispute // PART of the impliCATIONS of your
 c N V V' A+ P+ d N P d
 QUEstion at \ALL //
 N PHR # [T2-Emi-34]

By choosing to attach the high key/termination to the marked item *don't* Emi appears to project a context where *don't* is particularized; the local meaning generated serves to add force to her assertion.

Nineteen of the increment initial high key/terminations do not appear to realize a value other than that of a high termination.

- (28) / \uparrow NOW // what HAPpened after sepTEMBER the
 a w v p n
 ele/ \uparrow VENTH // and this exPLAINS // i /THINK //
 c N V con
 the PREsidents \ POlicy // [T2-Dc-23]
 d e N #

The target state realized after the production of the increment adds to the existing state of speaker/hearer convergence: it does not contain information which is contrary to the previously generated expectations. Dc does not seem to particularize the lexical item *now* as the lexical item is not used to draw an explicit temporal contrast with the non-present. The increment initial high-high/termination invites an active hearer intervention but in the context of the utterance does not project any contrastive implications. There were eight further examples where the initial high key/termination was attached to a closed lexical item such as *now* and *of course*, and conventions such as *I mean*. There were ten increment initial high key/terminations located in the corpus which were attached to open class lexical items but did not realize an independent key value e.g. (29).

- (29) that we should con \uparrow TINue // to disCUSS the \ ISsues //
 w N V V' V' V' d N+
 that we were GOing to \ \downarrow DIScuss // [T1-Bc-11]
 w N V V' V' #

The initial state prior to example (29) has projected a state of speaker/hearer convergence which includes the information that the scheduled meetings will continue despite the terrorist attack. The target state achieved by the production of (29) is in line with the prior discourse expectations. The initial high key/termination invites active intervention and generates a local meeting which focuses the hearer on the continuing act of discussing; the items discussed are presented as being anything but routine.

Before considering the communicative value realized by high key/termination in increment medial and final positions it is useful to summarize the argument so far. It appears that the high-key value in increment initial high key/termination may signal that the increment is contrary to expectations; but that on occasions the communicative value signalled by the high key is redundant. In the words of Brazil (1997: 63), in order to invite adjudication the speaker 'may attach unnecessary, but harmless contrastive implications' by reason of the simultaneous high key/termination selection.

Table 7.8 The communicative value of increment medial high key/termination

	Contrary to discourse expectations	Particularizing	Neither contrary nor particularizing	Unclassifiable	Total
Text 1	2	0	1	0	3
Text 2	4	9	14	0	27
Total	6	9	15	0	30

Table 7.8 shows that increment medial high key/termination has the potential to generate independent key and termination values in slightly less than half the cases (48.3 per cent). In the majority of the cases the high key/termination realized the speaker's request for active intervention and did not implicate a contrast. For instance in (30):

- (30) because you re UP against an ide\OLOGY //
 c N V A+ P d N
 that is prePARED to USE ANy\MEANS
 W+ V V' V' d N
 // at ↑\ALL // inCLUding KILLing ANy NUMBER
 CON V' V' d N
 of WHOLly INNocent /↓PEOple // [T2-Dmc-37]
 P a e N #

The extensive subchain after the high key/termination does not contain information contrary to the previously generated discourse expectations. It simply elaborates on the intermediate state produced after Dmc's production of the convention *at all*. Her selection of high key/termination signals to the hearer that she requires more than passive acknowledgement. The local effect is to draw attention to the *killing of any number of wholly innocent people*.

Example (31) illustrates a medial high key/termination with contrastive implications.

- (31) ↑LOOK in a small \WAY // we\↑LIVED through that // in
 ex p d e n N VPHR N P
 NORthern \IREland //over MAny MAny\↓DEcades // [T2-Mh-22]
 N N P d+ d N #

The target state prior to (31) projects a state of convergence where the hearer has been told of the pernicious effects of terror and of the spiral of

hatred that terrorist acts engender. The initial state does not, however, lead to any expectation that there will be a mention of Northern Ireland. Mh's choice of initial high key projects his view that the target state which will be achieved by example (31) is contrary to the discourse expectations. The medial high key/termination intensifies the contrast by focusing attention on the fact that *we lived through terror* is information which is wholly unexpected in the context.

Example (32) illustrates the most common independent key values realized by a medial high key/termination.

- (32) because \uparrow THEY \KNOW // that the VALue of \TERrorism //
 c n v w d N P+ N
 to \ \uparrow THEM // / \uparrow IS // as i was SAYing a MOment or \ \downarrow TWO
 P N v w n v v' phr
 ago // it s \uparrow NOT SIMply the ACT of \TERror // [Dc-19]
 (N) (V) a+ a d N P N #

Dc's choice of initial high key projects her understanding that the target state to be realized by the production of her increment will be contrary to the previous expectations. Within the increment she produces two medial high key/terminations attached to a pronoun and a copula respectively. Her reading highlights the distinction between *them* (the terrorists) and everyone else and by so doing Dc implies that the terrorists are irredeemably opposed to everyone else. The local meaning generated by the co-occurrence of the copula with the medial high key/termination appears to rule out the possibility of a negative value being attached to the copula; in other words, re-enforcing both the target state achieved by the increment and by the entire text.

To sum up, it appears, as with high key/termination in increment initial position, high key/termination in increment medial position may realize simultaneous high-key and high-termination values but that the high-key value may in a particular context also realize no more than 'unnecessary, but harmless contrastive implications'. It further appears that high key/termination in medial position is more likely than increment initial high key/termination to realize a redundant high-key value; in the co-constructed context of the increment the hearer knows that that no unnecessary contrastive implications are attached to the high termination.

Table 7.9 illustrates that high key/termination in increment final position may realize an independent high-key value. However, the independent high-key values in final positions were all realized in minimal increments

Table 7.9 The communicative value of increment final high key/termination

	Contrary to discourse expectations	Particularizing	Neither contrary nor particularizing	Unclassifiable	Total
Text 1	0	0	2	0	2
Text 2	0	13	12	1	26
Total	0	13	22	1	28

e.g. (33) and it remains to be seen whether or not an independent high-key value is possible in non-minimal increments such as (35) below.

- (33) you can ↑^SEE this // [T2-Tr-14]
 N V V' N #

Example (33) presents a minimal increment and, thus, it is entirely predictable that the high key/termination selection realizes both key and termination values. Tr projects a context where the target state is not contrary to the previously generated discourse expectations: it serves to exemplify the previous co-text. The high key/termination particularizes the lexical sense of *seeing* and generates a local meaning of insistence which is further strengthened by the co-presence of the rise-fall tone. One minimal increment final high key/termination proved to be difficult to classify:

- (34) you can see it in kash↑MIR for example // [T2-Jt-14]
 N V V' N P N PHR #

It is not clear whether or not Jt intended to particularize the lexical sense *Kashmir* and generate a local meaning realizing the value of *Kashmir of all places* or whether he intended solely to invite an active intervention from the hearer. In other words, the communicative value of some high key/terminations may prove to be ambiguous and the hearer who is actively co-constructing the discourse with the speaker will have to decide whether or not the contrastive implications realized are warranted or not.

- (35) that is √WHY the moment it looked // as if you could get
 N V W+ d N+ N V a c N V V'
 ↑PROgress // in √ISrael // and √PAlestine // it had to be
 N+ P N c N N V V'
 √STOPPED // [T2-Jt-33]
 V' #

It seeks an active intervention of the target state reached in (35). The final tone unit expresses a proposition very much in line with the previously generated discourse expectations. It is clear from the state of speaker/hearer convergence that the terrorists would oppose progress between Israel and Palestine as this would reduce the amount of hatred which they could feed off. In the context no other lexical sense would appear to be possible in increment final position and hence the final high key/termination does not realize a particularizing key.

This section has suggested that the values realized by high key in increment initial, medial and final position may also be realized by the production of high key/termination. However, only the high-termination value may have communicative significance because the key value may clash with the expectations generated both within the increment and by the previous discourse. In such cases, the key value is redundant and can be ignored by the hearer. Key only realizes a significant communicative value within tone units that appear to contain a proposition which is contrastive with the previous co-text or where it particularizes a lexical sense, while high termination seemingly always serves to invite a tacit or overt adjudication.

7.3 Low termination, Pitch Sequences and their Relationship to Increments

Low termination, according to Brazil (1997) releases the hearer from all expectations, it signals that the speaker neither invites adjudication nor expects hearer concurrence, and signals the completion of a pitch sequence. Brazil did not investigate the relationship between pitch sequences and increments but his comment that pitch sequences are not necessarily coterminous with grammatical sentences or exchanges suggests that pitch sequences identified solely by low termination may not be coterminous with increments which are identified by phonological, grammatical and semantic criteria (1997: 120). However, if his implicit claim that the pitch sequence is a semantic unit is correct, pitch sequence endings are likely to coincide with the endings of increments. Brazil (*ibid.* 119) recognizes that there is 'a suggestive similarity between the effect of the low-termination choice and the end-points of other units that the analyst sets up to deal with different aspects of linguistic patterning'. In other words, we should expect low terminations to occur either at actual or potential increment boundaries.

Other scholars, (e.g. Tench, 1996; Brown, Currie, and Kenworthy, 1980) argue that only pitch sequences which are immediately followed by high key, labelled as 'sequence chains' within a Discourse Intonation tradition by Barr (1990) and Pickering (2004), are of significance for the chunking of

Table 7.10 Number of low terminations in increment initial, medial and final position

Reader	Text 1				Text 2			
	Initial	Medial	Final	Total	Initial	Medial	Final	Total
Bc	0	1	4	5	0	0	8	8
Bs	0	3	7	10	1	4	21	26
Dc	0	0	5	5	0	1	4	5
Dmc	0	0	7	7	1	1	13	15
Emi	0	4	2	6	0	3	9	12
Gc	0	2	3	5	1	1	7	9
Jt	0	1	4	5	1	5	5	11
Mh	0	2	7	9	0	2	9	11
Rf	1	2	6	9	0	0	21	21
Sn	0	1	2	3	1	1	3	5
Tr	0	2	2	4	0	1	5	7
Total	1	18	49	68	5	19	105	129

speech into paragraphs. Tench (1996: 28) notes that intonational paragraphing is more prevalent in scripted than unscripted discourse and while possible is rare in spontaneous conversation.

Table 7.10 shows that low termination occurs predominantly as expected in increment final position but 3.5 per cent of low terminations occur in increment initial position and 19.2 per cent occur in increment medial position. In other words approximately a quarter of pitch sequence endings occur within increments e.g. (36).

- (36) it s \uparrow MY intention to LEAVE the g \searrow EIGHT // WITHin the NEXT
 N V d N+ V' d N P+ d e
 COUple of \searrow HOURS // and go DOWN to \searrow LONdon //
 e P d° N # c Ø V' PHR P N #
 and get a \searrow REport // FACE to \searrow FACE // with the po \searrow LICE //
 c Ø V' p N phr P d N
 and the eMERgency \searrow SERvices // and the MINisters that have
 c d N c d N W+ V
 been \searrow DEAling with this // and \searrow THEN // to reTURN LATER
 V' V' P N c a Ø V' A+
 this \searrow EVEning // [T1-JT-8-10]
 d N #

There are three increments contained within example (36). It produces a low termination in the tone unit immediately prior to the initial tone unit

of increment 8 projecting that the pitch sequence (sequence chain) will be maximally disjunctive (Brazil 1997: 117) and projects the information in the pitch sequence as independent from what has come before. The pitch sequence is completed by the low termination in medial position in increment 10. While it is tempting to try to explain the mismatch between the pitch sequence closure and the increment closure as arising from Jt's inexperience of reading aloud (see Esser 1988: 27) who provides evidence that recognizing paragraph boundaries in text is an acquired skill) the tonal composition after the low termination suggests otherwise. In terms of the taxonomy presented in Brazil (1992: 220) Jt is at the very least producing a level 4 (the lowest form of engaged) reading: his tone choices are influenced and constrained by the prior co-text. In other words his selection of an increment medial low termination appears to be motivated.

Within the corpus approximately 77 per cent of low terminations were in increment final position suggesting that as expected if all things are equal pitch sequence closures and increment closure equate. The reasons why all things may not be equal are examined at the end of this section. Prior to that it is worth examining the unmarked cases where low termination occurred in increment final position. In Text 1 36, or 49.3 per cent of, increment final low terminations were immediately followed by a high key and three, or 4.1 per cent of, increment final low terminations were immediately followed by a high key/termination. In Text 2, probably because of the less scripted nature of the original material the percentages of co-occurrence between increment endings and pitch sequence closures was slightly lower. There were 42, or 29.2 per cent of, low terminations in increment final position immediately followed by a high key and 14, or 9.7 per cent, which were followed by a high key/termination.¹⁶ Overall, 43.8 per cent of low terminations were in increment final position and followed by high keys. Example (37) illustrates.

- (37) it s \uparrow REAsonably \uparrow CLEAR // that there have been a . . . a
 N V E A W+ N V V' (d) d
 Series of \downarrow TERrriorist attacks // in \downarrow LONdon //
 N P+ e N P N #
 there are OBviously \downarrow CAsualties // both PEOPle that
 N V e d° N c d° N W+
 have \uparrow DIED // and people SERiously in \downarrow JURED //
 V V' c d° N Ø E A

and our \uparrow THOUGHTS and / $\underline{\text{PRA}}\text{yers}$ // of \uparrow $\underline{\text{COURSE}}$ // are
 c d N c d° N a V
 with VICtims and their \downarrow $\underline{\text{FA}}\text{milies}$ //
 P d° N c d N # [T1-Dmc-4-5]
 it s my in \uparrow TENTion . . .
 N V d N+ . . .

Dmc's tone selections result in a pitch sequence which is itself formed out of two increments. By selecting a mid termination to complete increment 4, Dmc projects a context where the target state achieved does not require an active intervention. Her choice of initial mid key signals that increment 5 adds to the previous target state but does not lead to a target state which itself is contrary to the previously generated discourse expectations. The increment final low termination closes the pitch sequence and the immediately following high key signals the beginning of a new pitch sequence: Dmc signals that she will move her discourse on by introducing an independent topic.

To summarize the preceding argument we have seen that pitch sequence initial key and final termination values contract the same relationship between pitch sequences as increment initial key and final termination values do between increments as indeed do adjoining key and termination values between tone units. We have seen that in the unmarked case pitch sequence endings coincide with increment endings. Figure 7.3 schematizes the proposed phonological hierarchy. The dotted arrow between increment(s) and pitch sequence reflects the reality that pitch sequence endings may not coincide with increment endings. The use of rounded brackets () indicates optionality. The # diacritic notates an increment ending and the up and down arrows signal high key and low termination respectively.

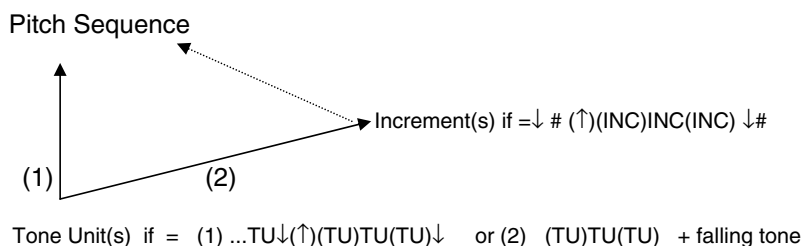


FIGURE 7.3 A phonological hierarchy from tone unit to pitch sequence

A sequence of tone units if bounded between two low terminations is a pitch sequence. The key following the low termination is likely to be high projecting maximal disjunction between the pitch sequences. However, the same sequence or part of the same sequence of one or more tone units, if coupled with an instance of falling tone, has the potential to form an increment.¹⁷ A sequence of one or more increments if bounded by two low terminations is a pitch sequence. The initial key following the previous increment final low termination is likely to be high signalling maximal disjunction between the pitch sequences. However, as example (36) above illustrates there are occasions where pitch sequences endings do not coincide with increment endings.

In order to understand why some low terminations occurred in positions within the increment other than in final position each occurrence of non-final low termination was examined. This revealed that in Text 1, 16 of the 19 low terminations and 14 of the 24 low terminations in Text 2 which did not coincide with increment boundaries occurred at sites of possible increment closure – or in Sinclair and Mauranen's (2007) terms at sites of completion but not of finishing – e.g. (38) which is reprinted as (38).

- (38) it s ↑MY intention to LEAVE the gEIGHT // withIN the NEXT
 N V d N+ V' d N P+ d e
 COUple of \uHOURS // and go DOWN to \uLONdon //
 e P d° N # c Ø V' PHR P N #
 and get a /REport // FACE to \uFACE // with the po\uLICE //
 c Ø V' p N phr P d N
 and the eMERgency \uSERvices // and the MINisters that have
 c d N c d N W+ V
 been \uDEAling with this // and /THEN //
 V' V' P N c a
 to reTURN LAtEr this \uEVEning // [T1-JT-8-10]
 Ø V' A+ d N #

After the pitch sequence closure Jt produces an extensive subchain which achieves target state. The presence of the extension after the low termination is difficult to account for. It may be that Jt when reading the unpunctuated text initially projected a context where the low termination coincided with the increment ending. Then, realizing that target state could only be achieved by tacking on the extensive subchain, he read the

extensive subchain. This resulted in the low termination inadvertently being selected in increment medial position.

There were 13 other examples of increment medial low termination in the corpus which were immediately followed by the conjunction *and* which either signalled an extension as in (38) or other circumstantial elements e.g. (39)

- (39) . . . what we hold ↓DEAR in this\↓COUNtry // and in other
CIVilized\NAtions throughout the world // [T2-Rf-20]

As in (38) it appears that Rf, while reading the unpunctuated text, inadvertently chose to place a low termination at a potential increment ending. Realizing that the achievement of target state required the production of further circumstantial elements she continued her increment until target state had been reached. In other words, Rf may have tried to end her increment twice!

The remaining 16 low terminations which coincided with potential but not actual increment endings are similar. The readers' selection of low termination projected a context showing that they inadvertently believed that their increments had achieved target state. It was only after they had produced the low termination that they realized the necessity of continuing the increment. Example (40) illustrates:

- (40) // i ↑DONT -THINK // -ERM // \ACtually // that it is
ANything to \DO with // a LOSS of aMERican \DINfluence //
at /ALL // [T2-Emi-1]

Emi produces the low termination, realizes that she has not achieved target state and reopens the increment by producing the adverbial which results in the achievement of target state. Thus, it seems that some of the lack of correspondence between low terminations and increment endings may be an artefact arising out of the reading procedure. If we exclude the low terminations which coincided with potential increment endings from the category of low terminations which do not correspond with increment boundaries there are only 14, or 7 per cent of, low terminations which do not coincide with increment endings.

Examination of these 13 instances showed that while the communicative function of the low termination is hard to make sense of, the low terminations, with one exception, were attached to lexical items which delimited the end of series of elements which functioned as theme; reduplicative

nominal or adverbial elements; projecting clauses; extensions and suspensions. The readers did not select low termination in an internal position within a series of elements such as an extension which may indicate that the readers were momentarily focusing on the syntax to the expense of the communication. Example (41) provides some illustrative examples:

- (41a) and ALL the \↓LEAders // as they will \INDicate a little bit later // SHARE our comPLETE resoLution to deFEAT \TERrorism // [T1-Rf-14] *Subject/Theme reduplication*
- (41b) because ↑THEY \KNOW // that the VALue of \TERrorism // to \↑THEM // /↑IS // as i was SAYing a MOment or \↓TWO ago // its ↑NOT SIMply the ACT of \TERror // [T2-Dmc-19] *Suspension*
- (41c) the REASON WHY they are DOing what they are \DOing // in iRAQ at the \MOment // and /↑YES // it IS REALLY \TOUGH // as a reSULT of . . . it IS because they \↓KNOW that // if RIGHT in the CENTre of the \↓MIDdle east // in an ARab MUSlim \COUNtry // you got a \NONsectarian // de/MOcracy // [T2-Jt-27] *Projection*.

In (41a) Rf's selection of low termination releases the hearers from all expectations. However, as the hearer has not been told it is not clear what expectations have been released. Dmc in (41b) may have used the low termination to signal the end of the suspension and to signal that she has resumed producing words which modify the existing intermediate state created immediately prior to the suspension. Jt in (41c) chose a low termination on *know* which coincides with the end of the projecting part of his increment. The remainder of his increment fulfils the expectation and projects what it is that they know. However, the value of the low termination is difficult to account for as is the following one, in that it releases the hearer from all expectations by closing a pitch sequence before the expectations have been satisfied.

Example (42) illustrates an increment medial low termination which is apparently the result of Gc's momentary processing problems.

- (42) beCAUSE they -KNOW that // the ↓VALue of -↓TERrorism // that the value of \TERrorism // to -THEM // \IS // . . . its not ↑SIMply the ACT of \TERror // its the CHAIN reACtion // that TERror brings \WITH it //

His repetition of the tone unit *the value of terrorism* coupled with the presence of level tone and the significant following pause indicates his detachment from the communicative act of reading aloud. Instead he appears to have been struggling to make sense of the text. The low termination appears to indicate that he momentarily felt that he had reached a point of closure before realizing that he had in fact not done so.

To conclude, it seems that low termination tends to overwhelmingly coincide with the closure of a potential semantic unit (identified by a run through of the chaining rules) and that this potential semantic unit is usually an increment. It seems likely that where a low termination appeared in a non-increment final position the reader had for one reason or another struggled to make sense of the text. It is also worth remembering Tench's (1996) observation that intonational paragraphing, while possible in spontaneous discourse, is rare means that the proposed phonological hierarchy set out in Figure 7.3 may be restricted to planned discourses.

7.3.1 Low key and low key/termination

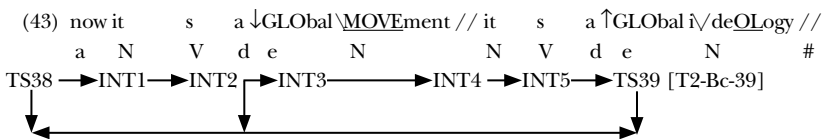
Table 7.11 shows that there were very few instances of low key found in the corpus. In other words, low key appears to represent a rare selection. This subsection will first explicate the communicative function of low key within and between increments. The paucity of occurrences of low key means that any conclusions formed must remain extremely tentative. Finally the communicative value of low key/termination will be examined in order to see whether the position of the low key/termination in the increment tends to determine whether the low-key or low-termination values predominate.

Table 7.11 Number of low keys in increment initial, medial and final position

Reader	Text 1				Text 2			
	Initial	Medial	Final	Total	Initial	Medial	Final	Total
Bc	0	1	0	1	2	0	1	3
Bs	0	1	1	2	1	1	0	2
Dc	0	0	0	0	1	0	0	1
Dmc	0	0	0	0	0	0	0	0
Emi	0	0	0	0	0	0	0	0
Gc	0	1	0	1	0	1	1	2
Jt	0	0	0	0	0	1	0	1
Mh	0	0	0	0	0	0	1	1
Rf	0	1	0	1	0	0	0	0
Sn	0	0	0	0	0	0	0	0
Tr	0	0	0	0	0	0	0	0
Total	0	4	1	5	4	3	3	10

Brazil (1997: 49–53) notes the communicative value of low key is to set up an existential equivalence between a tonic segment and a previous one. He claims that speakers' select low key either to intentionally project an equivalence which is unknown to their hearers or to acknowledge a self-evident equivalence. Thus we could expect that increment initial low key would signal that the target state reached after the achievement of the increment was an elaboration (Halliday 1994: 220) of the previous target state which itself contains all prior target states achieved in the text. Increment medial and final low key would signal an elaboration of the previous tonic segment within the increment.

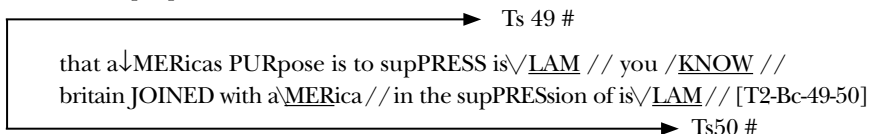
Three of the increment initial low keys are in increments which elaborate on the prior co-text e.g. (43):



In (43) Bc's selection of increment initial low termination projects a context where the target state achieved after increment 39 is, as the double headed arrow indicates, equivalent to the target/initial state which immediately preceded his production of the increment. Prior to (43) Bc has described a world where the terrorist enemy has been presented as a global threat. Example (43) elaborates but does not extend the target state by stating what Bc expects his hearer to accept as self evident.

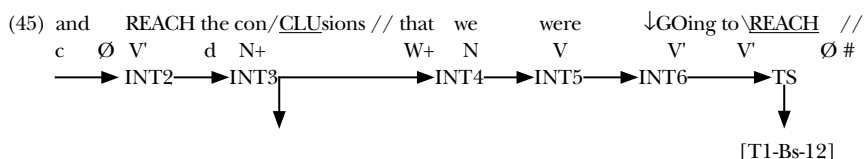
In (44), it is not clear to me as an analyst that Bc's production of increment 50 elaborates on the previously reached target state.

- (44) ↑LOOK what we've . . . // ↑LOOK weve GOT a \PROBLEM // Even in our OWN MUSlim ^COUNTRIES in europe // who will HALF -BUY in // in to -SOME of the // propaGANDA // thats \PUSHED at it //



Bc projects a context where the content of the propaganda told in increment 49 is presented as being equivalent to the content of increment 50. Thus, in the pursuit of his own communicative reading Bc projected the target state achieved after increment 50 as equivalent to the target state achieved after increment 49.

Ten out of the eleven low keys in the corpus project the equivalence of tonic segments within the increment e.g. (45) and (46). The sole exception, which has been presented as (42) above, results from Gc's momentary difficulties with the text. He repeats the tone unit but does not reselect low key; in other words *the value of terrorism* is not presented as being equivalent to the previous tonic segment.



Bs' selection of low key in (45) projects a context where irrespective of the terrorist attack the discussion will continue and as a result arrive at the only set of possible conclusions. Gc in (46) projects a context where he equates *this country* and *the other civilised nations throughout the world*. By so doing he includes *this country* in the set of civilised nations and distinguishes this set from others who are not civilized.

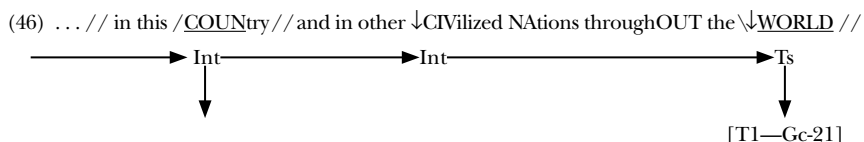


Table 7.12 shows that the readers selected low key/termination far more frequently than they did low termination. There was a strong tendency for low key/termination (79.2 per cent) to occur in increment final position which may suggest that the low-termination value overrides the low-key value.

Brazil (1997: 64), however, in a brief and terse discussion of low key/termination argues that:

there is a special constraint inherent in the equative function . . . [it] is not potentially redundant . . . The 'additional information' it projects has to have some kind of justification in the context of interaction.

Thus, it seems that all the instances of low key/termination should be justified as equative in the context of the interaction. All instances of low key/termination were examined in order to see whether or not this proved to be the case. The results are summarized in Table 7.13.

Table 7.12 Number of low keys/terminations in increment initial, medial and final position

Reader	Text 1				Text 2			
	Initial	Medial	Final	Total	Initial	Medial	Final	Total
Bc	0	0	2	2	1	0	5	6
Bs	0	2	4	6	1	2	5	8
Dc	0	0	5	5	1	0	6	7
Dmc	0	0	2	2	1	0	6	7
Emi	0	1	3	4	1	2	3	6
Gc	0	1	2	3	0	0	7	7
Jt	0	1	5	6	0	0	4	3
Mh	0	1	2	3	0	0	1	1
Rf	0	1	0	1	0	0	5	5
Sn	0	1	0	2	0	1	2	3
Tr	0	0	5	5	0	1	5	6
Total	0	8	29	37	5	6	49	59

Table 7.13 The communicative value of low key/termination

	Text 1			Text 2		
	Initial	Medial	Final	Initial	Medial	Final
No low-key value	0	0	7	0	1	11
End and projected as self evident	0	0	16	0	2	36
End and projected as equative	0	0	7	0	0	1
Not end and projected as self evident	0	1	0	0	3	0
Not end and projected as equative	0	1	0	3	0	0
Potential end and projected as self evident	0	5	0	0	2	0
Potential end and projected as equative	0	1	0	0	0	0
None of the above*	0	0	0	2	0	0

* The two unclassifiable increment initial low key/terminations were attached to the filled pause marker *erm* and could perhaps have been ignored as existing outside of increment structure. However, in the interest of completeness they were classified as exclamations and coded as suspensive elements within increment structure.

Contrary to Brazil’s claim that the low-key value of equivalence is always present it appears that speaker selection of low key/termination may, depending on the context, signal nothing other than a release from expectations. Example (47) illustrates:

- (47) MUslims in BRItain are FREE to √WORship // we have
N p n V E V' # N V' d°
PLUral soCieties // you √KNOW //
e N EX # [T2-Dmc-53]

The increment final low key/termination attached to the exclamation is neither self-evident nor is it equative. Instead it marks the closure of a pitch sequence and signals that the reader will continue the discourse by introducing a new topic. Of the 19 low key/terminations which do not realize a low-key value it is noteworthy that with one exception they are attached to tone units solely containing the following elements *thank you, you know, I'm afraid* and *at all*. This illustrates that potential intonational meaning can be dissolved by lexical meaning. The other example illustrates that contextual expectations have the potential to over-ride the low-key value:

- (48) look in a small \WAY // we LIVED through . . . // we \LIVED
 ex p d e n (N) (VPHR) . . . N VPHR
 through that // in NORthern \IREland // over many many
 N P N P d+ d
 \↓DEcades now //
 N A # [T2-Gc-25]

In the context in which it was read there are no prior expectations of time created to which the content of the final tone unit can enter into an equative relation with. Nor does the low key/termination signal self evidence. However, whenever the low key/termination was attached to nominal or verbal elements it projected a low-key value. If the low key/termination was attached to an element contained in a tone unit which was increment final both the key and termination values were realized e.g. (49) and (50). Example (51) illustrates that where the low key/termination occurs at any other position within the increment the low-termination value appears to be redundant.

- (49) that we should con↑TINue to disCUSS the \ISsues // that we
 w N V V' V' d N+ w N
 were GOing to dis/CUSS // and REACH the con\CLUsions //
 V V' V' c Ø V' d N+
 which we were going to \↓REACH // [T1-Emi-11]
 W+ N V V' V' Ø #
- (50) and to USE any MEthods at \↓ALL // but parTICularly
 c Ø V' d N APhR c a
 \TERrorism // to \↓DO that // [T2-Bs-20]
 N V' N #

- (51) and get a re\PORT // FACE to FACE with the /POLice // and
 c V' d N phr P d N c
 the e\↓MERGency services // and the /MINisters //
 d N c d N
 that have been \DEALing with this //
 W+ V V' V' P N
 and then to reTURN later this \EVENing // [T1-Sn-10]
 c a Ø V' A+ d N #

In (49) Emi's selection of the increment final low key/termination signals the closure of a pitch sequence and projects the target state reached after the production of the final tone unit as being equative to the intermediate state reached by the production of the previous tone unit – see discussion of (45) above. In (50) the increment final low key/termination closes a pitch sequence and projects an equivalence between the action described in the increment final tone unit and the discourse expectations created by the prior co-text. An identical target state would have been reached had Bs not produced the final tone unit. However, his production of the final tone unit with low key/termination adds force to his message by explicating the shared self-evidence of the amorality of terrorist actions.

Sn in (51) equates the police and the emergency services; mention of one implies the existence of the other. In the context of her utterance while *emergency services* is a potential syntactic point of completion it does not seem to signal a potential end. Sn has created a context where there is an expectation that she will describe the purpose of the trip to London; an expectation which is only satisfied by her mention of *ministers that have been dealing with this*.

- (52) in other \↓WORDS // PEOple werent –GOVerned //
 phr N V V'
 EIther by reLIGious fa\NAtics // or SEcular
 A+ P d° e N c d° e
 dic\TAtors // [T2-Bc-29]
 N #

Bc's selection of initial low key/termination projects that the target state reached by his increment 29 elaborates but does not extend the target state reached by the prior increment. There do not seem to be any

implications of finality and the putative low-termination value appears in the context of the utterance to be redundant. To conclude, low key/termination in increment non-final position does not appear to realize a low-termination value. In increment final position, on the contrary, it realizes a low-termination value and may realize a low-key value. The presence of the low key depends on the type of lexical item present in the final tone unit and on the previously created discourse expectations.

7.4 Conclusion

There is support in the data for the proposal that increment initial high key labels an increment with the communicative value of being contrary to the previously generated expectations. It was also shown that increment final high terminations label increments with communicative value. However, the value of inviting adjudication was shown to be inappropriately precise and hence, it was suggested that the communicative value realized by high termination in the corpus was more satisfactorily glossed as seeking active hearer intervention. Low terminations tend to occur at points in the discourse where Brazil's two necessary but not sufficient criteria have been satisfied. The discussion especially of the communicative value of high key/termination and low key/termination has illustrated that potential intonational meaning may be over-ridden by the lexicogrammar, the co-text and the prior discourse expectations.

By showing that key and termination choices label increments with added communicative significance the analysis has contributed to the outward exploration of the grammar and has demonstrated the insights that Brazil's grammar adds to the description of speech as a purposeful, contextualized, and cooperative happening.

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Part IV

Wrapping Up

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Chapter 8

Reviewing Looking Forward and Practical Applications

8.1 Aims and Findings of the Research

This book set out to review Brazil's exploratory descriptive grammar of used language by exploring the assumptions upon which it was built and by testing the descriptive accuracy of the grammar against different data. Brazil (1995) developed the rules of his grammar in a short monologic corpus while this book applied and extended his findings by examining how different readers' intonational selections construed read aloud text. This book set out to investigate whether Brazil's chaining rules adequately described how speakers fulfil their individual communicative needs and to explicitly incorporate the intonation systems of tone, key and termination within the grammar.

The first point to consider is Brazil's claim that meaning emerges incrementally; used language is formed out of increments – stretches of speech which fulfil two necessary but not sufficient criteria: one intonational, the other syntactic. However, while satisfaction of the two criteria is likely to result in the production of an increment it does not always have to. Successful satisfaction of an increment is ultimately dependent on whether the speaker has told something which has matched the hearer's informational needs. Identification of increments in discourse by an analyst is, therefore, inherently probabilistic.

Brazil (1995) has demonstrated that his proposed grammar elegantly captures how language unfolds into increments which succeed in moving hearers from initial to target states. The target state of the previous increment is the initial state of the subsequent one. Such a definition, while appropriate for Brazil's corpus proved not to be entirely incontrovertible in the data studied. Increments were located where the readers suspended their production of a modifying increment in order to backtrack and insert

another increment which they felt necessary for the production of their target state, see Chapter 5 examples (5) and (6).

Brazil's claim that speakers tell or ask based upon their assumption of the extent of shared speaker/hearer understanding was shown, like all theories predicated on the concept of shared knowledge, in Chapter 3 to be both psychologically problematic and nebulous. Adoption of Sperber and Wilson's concept of cognitive environments, however, ensured that Brazil's insightful recognition that speakers frame their messages on the basis of their moment by moment understanding of the state of speaker/hearer convergence was rendered psychologically feasible and operationally transparent. Instead of making assumptions as to the state of speaker/hearer understanding, speakers gauge their contributions to the discourse and decide if they should tell or ask based upon the state of their individual cognitive environments. They form their assessments of what needs to be told based upon their own perceptual abilities, their previous experiences and memories of deriving information from the environment and from any inferences arising from their perceptions, experiences and memories.

The literature review in Chapter 3 demonstrated that the four premises which underpin Brazil's grammar of used language are all supported. Brazil's claim that language is a purposeful, interactive, cooperative happening which can be interpreted as it unfolds in increments appears sound. Objections that linear grammars are incapable of describing all the possible sentences of the language were shown in Chapter 4 not to apply to a grammar which described used language. However, Brazil's claim that used language consists solely of end-rising and end-falling tones was shown to be in need of some reworking. Tench's (1997, 2003) claim, that some instances of level tone label speakers' contribution to the discourse as self evident, was supported in the data. As a result Brazil's description of used language has been extended to include speaker selection of level tone when they project their contribution to the discourse as self-evident.

Numerous scholars, though not Brazil have argued that the position where a tone occurs in an utterance determines its communicative significance. For example Crystal (1975) argues that tones only contribute an independent meaning when they are not the tones that are expected. He argues that it is only in the 20 per cent of cases where an utterance is completed with a non-falling tone that the 'unexpected' non-falling tone signals additional communicative value. Seventy-seven per cent of increments identified within the corpus examined here were completed by an end-falling tone. We have seen that increment final rises add extra communicative value to increments by deferring to the hearer, by emphasizing the state of speaker/hearer

social convergence and by signalling that the target state attained was in Prince's terminology inferable. Increment final fall-rises were shown to project that the attained target state contained a contextual implication which the speaker projected that the hearer could unpack.

In Chapter 1 it was stated that Brazil (1995: 245) recognized that a fuller description of the grammar must include a description of key and termination. This book demonstrated that increment initial key and increment final termination attached value not only to tone units but also to increments. Increment initial high key labels the telling contained within a telling increment as contrary to the previously generated expectations. Within increments – and especially in increments containing an initial high key – high keys tended to particularize the lexical items to which they were attached. Brazil (1997) glosses the communicative value of high termination as inviting hearer adjudication but admits that in many instances such a gloss is inappropriately precise. Instead increment final high terminations signalled speakers' expectations that their hearers would do more than passively concur with the telling realized by the increment. All other high terminations were shown to add extra force internal to increments by seeking an optional active hearer intervention prior to a point the hearer recognized as an increment closure. In tone units with minimal tonic segments it was demonstrated that, regardless of position within the increment, the communicative value realized by the high-termination value was significant but the significance of the simultaneous communicative value realized by the high key was optional and could be overridden by contextually generated expectations.

The description here has also expanded Brazil's description by incorporating low key and low termination into the grammar. Increment initial low key was shown to project that the target state reached by the completion of the increment was an elaboration of and not an extension of the previous target state. Increment internal low keys projected the equivalence of the intermediate/target states achieved by the production of tonic segments within the increment. Low termination signalled a closure of a pitch sequence and in the data studied almost always co-occurred with an actual or potential increment ending. The discussion of low key and low termination in minimal tonic segments demonstrated that potentially low-key and low-termination values can accrue in minimal increments regardless of the position of the minimal tonic segment within the increment. The actual presence of the low-termination or low-key value is ultimately dependent on the expectations created by the context and the co-text.

Two language features not present in Brazil's original data, ellipsis and dysfluency, were explored and possible codings proposed. Brazil's requirement that the grammar contain initial N V elements was shown to be an idealized abstraction which speakers in situated discourse may not follow. Speakers are free to produce chains which contain the minimum number of elements appropriate to their communicative needs. Coding the situationally or textually mandated elements which were realized by zero with the \emptyset symbol rendered the workings of the chains more semantically transparent and ensured that utterances which met communicative needs but breached Brazil's strict syntactic coding could be included within the grammar.

Brazil (1995) included the '...' coding to notate points in the discourse where speakers abandoned increments and this coding was found to accurately describe dysfluency which resulted in abandoned increments. However, many instances of dysfluency located in the data, resulted not in the abandoning of increments but rather in the insertion of lexical elements of the same class membership as the previous lexical element. Within the chain the second lexical element did not result in the creation of a new intermediate state. Instead it cancelled the expectations created by the previous element and then re-imposed a new expectation. In order to make the workings of the chains more semantically transparent and highlight the fact that the replaced elements failed to result in an expectation which led to the creation of target state, they were bracketed.

Brazil argues that chains are composed of word-like elements which move from an initial state through optional intermediate state(s) to a target state. Such a view appears opposed to much recent linguistic theory which has argued that language is at least partly formed out of prefabricated chunks. Evidence from the literature was produced in Chapter 4 which suggested that idioms; phrasal verbs; verbs in phase; the future use of the *to be-ing* pattern and compound nouns are more transparently coded as chunks rather than decomposed into orthographic words. Chapter 6 confirmed that tonality selections indicated that speakers treated such elements as chunks. The coding of such elements as PHR-V, PHR and N rendered the workings of the grammar more transparent, e.g. example (12) *look at* in Chapter 5 which in Dc's reading was coded as a v'p sequence rather than as a v'phr.

8.2 Limitations in the Research/Unresolved Issues

All research is constrained by limited time and space, a lack of open-ended resources, and by the data employed, and so a choice must be made about

what to include and what to exclude. This book has demonstrated the power of describing speech as a series of increments which result in a series of target states. Each target state functions as an act of telling by conveying something about the world. Recognition of the added communicative value realized by high key and high termination and non-falling tone in increment-initial and final position allows the grammar to code how speakers signal their expectations and illustrates how they co-operate and compete in the management of their co-constructed unfolding meaning which is incrementally produced by their discourse. Yet, more remains to be done: a fruitful area of future research would appear to be a careful study of suspensive elements in the chains, which appear identical to the proposed OI chunks in Sinclair and Mauranen (2007), and function not to move the message on but rather to facilitate the achievement of a target state by smoothing out the interactive nature of discourse. Such research would be best undertaken through the investigation of a corpus of conversation.

A further area of interest not touched upon here, and worthy of future research, is the relationship between increments and turn taking with reference to discourse units such as adjacency pairs from the Conversation Analysis tradition (Levinson 1993 and Sacks (1995), and exchanges from the Discourse Analysis tradition, (Sinclair and Coulthard 1975). Intuitively, it appears that an asking exchange can easily be described as an initiating increment followed by a responding one with optional speaker feedback. In Conversation Analysis terms the initiating increment can be viewed as the first member of an adjacency pair which creates an expectancy of an appropriate response. However, the relationship between telling increments and exchanges or adjacency pairs is less clear. Speakers in pursuit of their individual conversational goals may produce an extended series of telling increments which result in the achievement of their ultimate telling and it is unclear whether the series of increments represents one informing move in an exchange or a series of informing moves.¹ In either case, the issue arises as how the final telling increment before the turn creates an expectation that a change of speaker is desired.

This text has argued for the coding of some lexical elements as chunks. In Chapters 1 and 5 some evidence was presented supporting the view that tonality selections segment speech into information units. It appears inconceivable that a lexical element can co-exist across more than one information unit and so a chunk which is a lexical element is always likely to be found within an information unit. Recognition that lexical elements are found within single information units may lead to a more psychologically accurate coding of elements within increments by distinguishing between the assembly of increments from chunks and from orthographic words.

More evidence, which can only be gleaned from the examination of a larger corpus, is required to enable an analyst to examine the relationship between tonality and strings of elements which may at times realize a chunk and at other times realize a concatenation of orthographic words e.g. *look after*. It is still premature, except in the cases explicitly mentioned in Chapters 4 and 5, to make any definitive claims as to when or if increments should be coded according to a principle analogous to Sinclair's idiom principle.

In Chapter 4 it was proposed that the co-occurrence of the overt realization of a textually or situationally mandated lexical element with a prominent syllable realized additional communicative value. As no instances of such lexical elements were found in the corpus, a larger corpus is required to investigate if the original proposal is sound. Chapter 7 has shown that pitch sequence endings tend to coincide with the endings of increments. However, data from a myriad of diverse genres such as news reading; informal conversation; sports' commentary; public service announcements; and debates etc., is needed in order to examine the relationship between increments and pitch sequences. With the exception of Tench (1990: 510ff.) it is regrettable that to date little attention has been focused on the communicative pressures imposed by the expectations produced by different genres in how speakers tend to use the meaning making resource of intonation.

Since the publication of Brazil (1995) the importance of *heads* (the fronting of *N elements* which anticipate the main subject of the clause) and *tails* (the slot available at the end of the chain where speakers can insert lexical items which amplify, extend or reinforce what has been said) to how hearer's comprehend discourse has been recognized (see Carter and McCarthy 1997). A fully descriptive grammar needs to be able to codify features of unscripted conversation such as *heads* and *tails* and detail the additional communicative value they bring to the increment. Such features can only be investigated in a conversational corpus.

8.3 Implications of the Research

Brazil (1995) demonstrated that narrative retelling could usefully and elegantly be described by a grammar of increments. Each increment realized a target state which was simultaneously the initial state for the following increment until the speaker has achieved the ultimate telling. By segmenting discourse into purposeful driven increments Brazil's grammar represents

an attempt to describe speech in its own terms and not as a written text formed out of abstract units grammarians in a post hoc analysis can identify as sentences. He claims that his grammar can be used to analyze 'any sample of used language' (ibid. 222). However, this book has shown that while Brazil's claim is well founded the mechanism of his chaining rules has to be relaxed slightly in order to be able to successfully describe the features of ellipsis and dysfluency found in speech. The incorporation of the communicative value realized by key selections (which signal the expectations the speaker projects will be realized by the increment), termination selections (which signal the speaker's expectation of the hearer's reaction to the increment) and end-rising and level tone has expanded the descriptive power of the grammar in detailing a user's model of the purposeful driven nature of speech as a process.

This view of describing language as a flow of spoken lexical elements punctuated by the realization of increments which meet communicative ends represents an alternative way of mapping out how individuals communicate. There are no formal rules which must be satisfied prior to use; rather the function realized by the language sculpts its emergent form in the discourse (see Hopper 1987, 1998), and Hunston and Francis (2000) for descriptions of grammars in which meaning emerges from regularities in the discourse). The grammar presented here allows for another description of the meaning potential of the language; one that highlights lexis, intonation and context at the expense of abstract syntactic rules.

Space does not allow for any more than a brief sketch of the implications generated by looking at the meaning potential of the language from the standpoint that it is a purposeful, cooperative and contextualized happening. But such a view has obvious practical applications both in the teaching of the language in foreign/second language classrooms and for discourse analysts examining the performance of purposeful driven speech. The following paragraphs outline two possible applications.

It is hoped that the view of language described above could stand alongside traditional descriptions of the language in foreign/second language classrooms. Learners instead of thinking solely in terms of formal rules of how to generate sentences could be instructed to think in terms of the realizations of target states which satisfy communicative ends. They could be instructed in 'learning to mean' (Halliday 1973) rather than in learning abstract rules.² Learners could be presented with language and asked to focus on consciousness-raising exercises³ detailing how the speaker achieved the desired communicative purpose. Metalingual classroom exercises starting with instances of the simple chaining rules could be

designed to train learners in how to identify increments which satisfied their present communicative needs. Once learners have learnt to recognize the workings of the simple chaining rules further exercises could be designed to facilitate the study of the state of expectations generated by the production of elements within increments. Such exercises might raise awareness of which orthographic words tend to collocate and form unitary lexical elements. Tasks illustrating how intonational selections allow speakers to frame their increments: i.e. as unexpected or normal; as requiring active intervention or passive reception could also be presented to the learners to raise their awareness of how speakers achieve their communicative goals.

The view of language as a dynamic happening has the potential to enrich discourse analysis by explicating the communicative value generated by an oral performance of a text. For example a clause/product analysis of a political speech demonstrates the abstract meaning potential of the language in enabling the speaker to realize the message. However, while the speech was written as a product it is necessarily perceived by an audience as a dynamic happening or process, as a series of increments which realize target/initial states. Recognition that language may also be mapped as a happening allows an analyst to explicate the communicative value of the performance of a text. Skilled orators are often coached and hence expert at using pausing, key, termination, and tone to manipulate both their audiences' expectations and the projected state of speaker/hearer understanding. A process analysis which investigates their speeches as a series of increments, i.e. modified target/initial states, offers the potential to add to the explication of how language is used to realize contextualized meaning.

Forms of discourse such as unscripted conversation may perhaps be more fruitfully viewed as happenings. Speakers have their own individual though perhaps vague and unfolding goals and aims which they satisfy increment by increment. Rather than relying solely on the imposition of a post-hoc product analysis, analysts can also detail how speakers selected from the abstract meaning potential found in the language system in order to achieve their individual communicative purposes. In short, a more complete and rounded description of the abstract meaning potential inherent in the language system may be gleaned from viewing language events both as product/text and as process/discourse.

Appendix 1

Transcript of first 25 lines of monologue from Brazil (1995) with suggested alterations in the coding.

1. a friend of mine told me this amazing story the other day she was a
d N p n V N+ N v' N N # N V...
d...
2. she'd been shopping and she came back to this multi-story car park
N V V' V' # & N V A+ P d e N+ N
c N
3. that she's been in and it was kind of deserted... erm... and as
W+ N V V' P Ø & N V' # & w
c c
4. she was walking towards her car she saw this figure sitting in the
n v v' p d n N V d N Ø V' P d
N+
5. passenger seat... she thought what's that I've been burgled
N+ N # N V N V N # N V V' V' #
and as she
& a n
c
6. walked towards the car feeling a bit scared this person got out of the
v p d n v' v' d N V A+ P d
7. car... and it was a little old lady... so she thought (oh well)
N Ø # & N V d e e N # & N V
Ø c c ex

8. probably it 's not a burglar and er . . . (anyway) she asked
 a N V d N # & N V
 c a
 her and the
 N # & d
 c
9. woman said . . . er . . . apparently she'd been sitting there waiting for her
 N V a N V V' V' A V' P d
10. daughter to arrive and the daughter hadn't turned up and she was
 N V' # & d N V V' A # & N V
 c PHR-V c
11. feeling a bit giddy and faint and so she went and sat in the car . . .
 V' E & N V & V P d N #
 c E c c
12. it seems a very strange thing to do . . . (I mean) . . . apparently she'd been
 N V d e N V' # a N V V'
 con
13. trying all the door handles one was open so she sat in it (so anyway)
 V' N+d N+ N # N V A & N V P N
 d N c a
14. this friend of mine . . . erm . . . said (you know) . . . what are you going
 d N P N V w V N V'
 con
15. to do now . . . when are you meant to be meeting your daughter and the
 V' A # w V N V' V' V' d N # & d
 c
16. woman said half an hour ago so she said well what are
 N V A # & N V w V
 c a w V
 you going to do
 N V' V'
 N V' V''

17. now and (anyway) . . . finally this woman asked her if er
 A & a d N V N+ W
 A c a
 she could possibly
 N V a
18. give her a lift home because it was freezing and this old lady looked
 V' N+ d N A W N V V' # & d e N V
 c
19. really ill and my friend thought . . . (oh) . . . I'd better be nice
 E # & d N V N V V' E
 c ex
20. and it was a bit out of her way but she thought she'd better do
 & N V d N P d N # & N V N V V'
21. the . . . do the right thing so she piles her into the car and they go
 d V' d e N # & N V N P d N # & N V
22. off . . . and as they are driving along she just happens to look across
 A # & a n v v' a N V V' A Ø#
 a PHR-V
23. and sees her hands . . . and they weren't woman's hands at all . . . they
 & V d N # & N V e N P N # N
 c Ø c
24. were man's hands . . . it's got hairy big hairy hands . . . the little old
 V e N N V V' e e e N d e e
25. dear's clothes on . . . a funny little hat and everything . . . but these big
 e N A d e e N & N # & d e
 c

Explanatory Notes

Brackets in the text line indicate that the element was not coded in the grammar line of Brazil (1995).

The three dots (. . .) in the text line indicate hesitations or pauses. No information is available as to their duration. However in the grammar line the three dots (. . .) indicate an incomplete/abandoned increment.

- Line 1: Coding of *she was a* has been changed to N V d . . . to indicate the abandoned nature of the increment.
- Line 2: *And* is coded as *c* which indicates that it connects phrasal or lexical elements. It is notated in lower script to indicate that it is a suspensive element which does not lead to the creation of a further intermediate state.
Car park is coded as a single nominal element. Also line (13) *door handles*.
- Line 4: *She* is the first N in a reduplicative pair.
- Line 7: There is no unrealized element after *car* as indicated by the Ø symbol.
So is coded like *and*. See line 1.
Oh well is coded as an exclamation. Also line (19) *oh*.
- Line 8: *Anyway* is coded as a suspensive A element.
- Line 10: *Turned up* is coded as a PHR-V element.
- Line 11: *Faint* is coded as a separate adjectival element.
- Line 12: *I mean* is coded as a *convention* to indicate the fact that it functions as an adverbial which indicates that the speaker is either explaining something more clearly or justifying a statement or comment previously made. It is notated in lower case to indicate that it is a suspensive element: it does not lead to the creation of a further intermediate state. Also line (14) *you know*.
- Line 22: *Just* is coded as a suspensive A element.
Happens to look across is coded PHR-V to indicate that the verbs are in phase.
Across is coded as an independent A element only because Cobuild does not recognize *look across* as a phrasal verb.
- Line 23: The elliptical nominal element which refers to the *friend* is coded as Ø.

Appendix 2

Text 1

I am just going to make a short statement to you on the terrible events that have happened in London earlier today and I hope you understand that at the present time we are still trying to establish exactly what has happened and there's a limit to what information I can give you and I'll simply try and tell you the information as **as** best I can at the moment it's reasonably clear that there have been a **a** series of terrorist attacks in London there are obviously casualties both people that have died and people seriously injured and our thoughts and prayers of course are with the victims and their families it's my intention to leave the G8 within the next couple of hours and go down to London and get a report face to face with the police and the emergency services and the ministers that have been dealing with this and then to return later this evening it is the will of all the leaders at the G8 however that the meeting should continue in my absence that we should continue to discuss the issues that we were going to discuss and reach the conclusions which we were going to reach each of the countries around that table has some experience of the effects of terrorism and all the leaders as they will indicate a little bit later share our complete resolution to defeat this terrorism it's particularly barbaric that this has happened on a day when people are meeting to try to help the problems of poverty in Africa and the long-term problems of climate change in the environment just as it is reasonably clear that this is a terrorist attack or a series of terrorist attacks it is also reasonably clear that it is designed and aimed to coincide with the opening of the G8 there will be time **to** to talk later about this it's important however that those engaged in terrorism realize that our determination to defend our values and our way of life is greater than their determination to cause death and destruction to innocent people in a desire to impose extremism on the world whatever they do it is our determination that they

will never succeed in destroying what we hold dear in this country and in other civilized nations throughout the world thank you (392 words)

Text 2

I don't think erm actually that it is anything to do with a loss of American influence at all I think we've got to go back and ask what changed policy because policy has changed in the past few years and what changed policy was September the 11th that changed policy but actually before September the 11th this global movement with a global ideology was already in being September the 11th was the culmination of what they wanted to do but actually you know and this is probably where the policy makers such as myself were truly in error is that even before September the 11th this was happening in all sorts of different ways in different countries I mean in Algeria for example tens and tens of thousands of people lost their lives this movement has grown it is there it will latch onto any cause that it possibly can and give it a dimension of terrorism and hatred you can see this you can see it in Kashmir for example you can see it in Chechnya you know you can see it in Palestine now what is its purpose its purpose is to promote its ideology based on a perversion of Islam and to use any methods at all but particularly terrorism to do that because they know that the value of terrorism to them is as I was saying a moment or two ago it's not simply the act of terror it's the chain reaction that terror brings with it terrorism brings the reprisal the reprisal brings the additional hatred the additional hatred breeds the additional terrorism and so on look in a small way we lived through that in Northern Ireland over many many decades now what happened after September the 11th and this explains I think the President's policy but also the reason why I have taken the view and still take the view that Britain and America should remain strong allies shoulder to shoulder in fighting this battle is that we are never going to succeed unless we understand they are going to fight hard the reason why they are doing what they are doing in Iraq at the moment and yes it is really tough as a result of it is because they know that if right in the centre of the Middle East in an Arab Muslim country you got a non-sectarian democracy in other words people weren't governed either by religious fanatics or secular dictators you got a genuine democracy of the people how does their ideology flourish in such circumstances so they have imported the terrorism into that country preyed on whatever reactionary elements there are to boost it and that's why we have the issue there and that's why the Taleban are trying to come back in

Afghanistan that is why the moment it looked as if you could get progress in Israel and Palestine it had to be stopped that's the moment when as they saw that there was a problem in Gaza so they realized well there's a possibility now we can set the Lebanon against Israel now it's a global movement it's a global ideology and if there's any mistake that's ever made in these circumstances it's as if people are surprised that it's tough to fight because you're up against an ideology that is prepared to use any means at all including killing any number of wholly innocent people and I don't dispute part of the implication of your question at all erm in the sense that you look at what is happening in the Middle East and what is happening in Iraq and Lebanon and Palestine and of course there's a sense of of shock and frustration and anger at what is happening and grief at the loss of innocent lives but it is not a reason for walking away it's a reason for staying the course and staying it no matter how tough it is because the alternative is actually letting this ideology grip larger and larger numbers of people and it is going to be difficult look we've got a problem even in our own Muslim communities in Europe who will half buy in to some of the propaganda that's pushed at it that the purpose of America is to suppress Islam you know Britain's joined with America in the suppression of Islam and one of the things we've got to stop doing is stop apologizing for our own positions you know Muslims in America as far as I'm aware are free to worship Muslims in Britain are free to worship we have plural societies you know it's nonsense the propaganda is nonsense and we're not going to defeat this ideology until we in the West go out with sufficient confidence in our own position and say this is wrong it's not just wrong in its methods it's wrong in its ideas it's wrong in its ideology it's wrong in every single wretched reactionary thing about it and it will be a long struggle I'm afraid but there is no alternative but stay the course with it and we will. (858 words)

Note

The repeated lexical items in Texts 1 and 2 – marked in grey – which were produced by Blair were removed from the orthographic version given to the eleven readers.

Appendix 3

Text 1

1. I am just going to make a short statement to you on
N V a V' V' d e N P N P
the terrible events that have happened in London earlier today (#)¹
d e N W² V V' p N A+ A
2. and I hope you understand that at the present time
c N V N V W P d e N+
we are still trying to establish exactly what has happened
N V e V' V' A W V V' Ø (#)
3. and there's a limit to what information I can give you
c n V d N P d N+ N V V' N (#)
4. and I 'll simply try and tell you the information³
c N V a V' c V' N+ d N
as best I can at the moment
phr P d N (#)
5. it's reasonably clear that there have been
N V A E W N V V'
a series of terrorist attacks in London
d N P+ e N P N (#)
6. there are obviously casualties
N V a d° N (#)
both people that have died and people seriously injured
d N W V V' c d° N Ø A E (#)

7. and our thoughts and prayers of course are with the victims
 c d N c d° N a V P d N
 and their families
 c d N (#)
8. it's my intention to leave the G8 within the next couple of hours
 N V d N+ V' d N P+ d e e P d° N (#)
9. and go down to London
 c Ø V' A+ P N (#)⁴
10. and get a report face to face with the police
 c Ø V' d N phr P d N
 and the emergency services and the ministers that have been
 c d N c d N W V V'
 dealing with this
 V' P N (#)
11. and then to return later this evening
 c a Ø V' A d N (#)⁵
12. it is the will of all the leaders at the G8
 N V d N P+ d d N P d N
 however that the meeting should continue in my absence
 c W d N V V' P d N (#)
13. that we should continue to discuss the issues
 Ø w N V V' V' V' d N+
 that we were going to discuss
 W N V V' V' (#)⁶
14. and reach the conclusions which we were going to reach
 c Ø V' d N+ W N V V' V' Ø (#)
15. each of the countries around that table
 n p+ d N p d n
 has some experience of the effects of terrorism
 V d N P+ d N P N (#)

16. and all the leaders as they will indicate a little bit later
 c d d+ N c N+ V V' phr
 share our complete resolution to defeat this terrorism
 N d e N V' d N (#)
17. it 's particularly barbaric that this has happened on a day
 N V A E W N V V' P d N+
 when people are meeting to try to help the problems of
 W d° N V V' V' V' d N P+
 poverty in Africa and the long-term problems of climate change
 N P N c d e n P+ N
 in the environment
 P d N (#)
18. just as it is reasonably clear
 a N V A E
 that this is a terrorist attack or a series of terrorist attacks
 W N V d e N c d n P e N (#)
19. it is also reasonably clear that it is designed and
 N V A+ A E W N V V' c
 aimed to coincide with the opening of the G8
 V' V' P+ d n P d N (#)
20. there will be time to talk later about this
 N V V' E V' A+ P N (#)
21. it 's important however that those engaged in terrorism⁷
 N V E A W N Ø v' p n
 realize that our determination to defend our values
 V W d N V' p N
 and our way of life is greater than their determination
 c d N P N V E P d N
 to cause death and destruction to innocent people
 V' N c N P+ e N
 in a desire to impose extremism on the world
 P+ d N V' N P d N (#)

22. whatever they do it is our determination
 phr N V d N
 that they will never succeed in destroying what we hold dear
 W N V A+ E P N W N V E
 in this country and in other civilized nations throughout
 P d N+ c P+ d° e+ e N P
 the world thank you
 d N PHR (#)

Text 2

1. I don't think erm actually that it is anything to do with
 n v v' ex a w N V N V' p
 a loss of American influence at all
 d N P e N PHR (#)
2. I think we've got to go back and ask what changed policy
 phr N V V' V' A c V' W V N (#)
3. because policy has changed in the past few years
 w N V V' P d e+ e N (#)
4. and what changed policy was September the 11th
 c w V N V N (#)
5. that changed policy
 N V N (#)
6. but actually before September the 11th
 c a+ a N+
 this global movement with a global ideology was already in being
 d e N p d e N V A+ P N (#)
7. September the 11th was the culmination of what they
 N V d N+ p w N
 wanted to do
 V V' Ø (#)

8. but actually you know and this is probably where the policy makers
 c a con c N V a w d N+ N+
 such as myself were truly in error
 d n V A+ P N (#)
9. ... is that even before September the 11th⁸
 ... v n e a n
 this was happening in all sorts of different ways in
 N V V' P+ d n P d° e N P d°
 different countries
 e N (#)
10. I mean in Algeria for example
 phr p n phr
 tens and tens of thousands of people lost their lives⁹
 num c num p N V d N (#)
11. this movement has grown
 d N V V' (#)
12. it is there
 N V N (#)
13. it will latch onto any cause that it possibly can
 N V V' P d N+ W N a V Ø (#)
14. and give it a dimension of terrorism and hatred
 c Ø V' N+ d N P N c N (#)¹⁰
15. you can see this
 N V V' N (#)
16. you can see it in Kashmir for example
 N V V' N P N PHR (#)
17. you can see it in Chechnya you know¹¹
 N V V' N P N CON (#)

18. you can see it in Palestine
N V V' N P N (#)
19. now what is its purpose
a W V d N (#)
20. its purpose is to promote its ideology based on a
d N V V' d N V' P+ d
perversion of Islam
N P N (#)
21. and to use any methods at all but particularly terrorism to do that
c V' d N phr c a N V' N (#)
22. because they know that the value of terrorism to them
w n v w d N P+ N P N
is ... as I was saying a moment or two ago
V ... c n v v' d n c num a
(it' s) not simply the act of terror
(N) (V) a+ a d N P N (#)¹²
23. it' s the chain reaction that terror brings with it
N V d N W N V P N (#)
24. terrorism brings the reprisal
N V d N (#)
25. the reprisal brings the additional hatred
d N V d e N (#)
26. the additional hatred breeds the additional terrorism and so on (#)
d e N V d e N PHR
27. look in a small way we lived through that in Northern Ireland
con p d e n N VPHR N P N
over many many decades now
P d+ d N A (#)

28. what happened after September the 11th ...
 w v p n ...¹³
 and this explains I think the President's policy
 c N V phr d e N (#)
29. but also the reason why I have taken the view
 c a d n w N V V' d V (#)
30. and still take the view ...
 c Ø a V d N ...¹⁴
31. that Britain and America should remain strong allies
 w N c N V V d° e N+
 shoulder to shoulder in fighting this battle
 phr P N+ d N (#)
30. is that we are never going to succeed
 V w N V a V' V' Ø (#)
32. unless we understand they are going to fight hard
 c N V Ø N V V' V' E (#)
33. the reason why they are doing
 d n w N V V' Ø
 what they are doing in Iraq at the moment ...
 W N V V' P+ N P d N ...
34. and yes it is really tough as a result of it
 c con N V A E P+ d N P N (#)
33. is because they know that if right in the centre of the Middle East
 V w N V W c a P+ d N P+ d N
 in an Arab Muslim country you got a non-sectarian democracy
 P d e+ e N+ N V d e N (#)
34. in other words people weren't governed
 phr N V V'
 either by religious fanatics or secular dictators
 A+ P d° e N c d° e N (#)

35. you got a genuine democracy of the people
N V d e N P d N (#)
36. how does their ideology flourish in such circumstances
w V d N V P d N Ø (#)
37. so they have imported the terrorism into that country
c N V V' d N P d N (#)
38. preyed on whatever reactionary elements there are to boost it
Ø V'PHR d e N+ N V V' N(#)
39. and that 's why we have the issue there
c N V W N V d N A (#)
40. and that's why the Taleban are trying to come back in Afghanistan
c N V W d N V V' PHRV' P N (#)
41. that is why the moment it looked
N V W d N+ N V
as if you could get progress in Israel and Palestine it
a c N V V' N+ P N c N+ N
had to be stopped
V V' V' (#)
42. that's the moment when as they saw that there was
N V d N W c N V W N V
a problem in Gaza
d N P N (#)
43. so they realized well there's a possibility now
c N V a N V d N+ a Ø
we can set the Lebanon against Israel
N V V' d N P N (#)
44. now it' s a global movement
a N V d e N (#)

45. it's a global ideology
N V d e N (#)
46. and if there's any mistake that's ever made in these circumstances
c c N V d N W V a V' P d N
47. it's as if people are surprised that it's tough to fight
N V c d° N V E W N V e V' Ø (#)
48. because you're up against an ideology that is prepared to use
w N VPHR d N W V V' V'
any means at all including killing any number of
d N phr V' V' d N P
wholly innocent people
a e N (#)
49. and I don't dispute part of the implication of your question at all
c N V V' A+ P+ d N P d N PHR (#)
50. erm in the sense that you look at what is happening
ex p d n w n vphr W V V'
in the Middle East and what is happening in Iraq and
p d N c W V V' P N c
Lebanon and Palestine
N c N (#)
51. and of course there's a sense of shock and frustration and anger
c a N V d N P+ N c N c N
at what is happening and grief at the loss of innocent lives
P W V V' Ø c Ø N P+ d N P e N (#)
52. but it is not a reason for walking away
c N V a d N P N'PHR (#)
53. it's a reason for staying the course
N V d N P N+ d N
and staying it no matter how tough it is
c N+ N+ phr W E N V Ø (#)

54. because the alternative is actually letting
 w d N V a V'
 this ideology grip larger and larger numbers of people
 d N V d° e c e N P N (#)
55. and it is going to be difficult
 c N V V' V' E (#)
56. look we've got a problem even in our own
 con N V V' d N A+ P d° e+ e+
 Muslim communities in Europe who will half buy in to some
 e N p N W V a V' P+ N
 of the propaganda that's pushed at it
 P d N+ N V V' P N
 that the purpose of America is to suppress Islam
 N+ d N P N V V' N (#)
57. you know Britain's joined with America in the suppression of Islam
 con N V V' P+ N P+ d N P N (#)
58. and one of the things we've got to stop doing
 c num p d N+ n v v' v' v'
 is stop apologizing for our own positions
 V V' V' P d° e+ e+ N (#)
59. you know Muslims in America as far as I'm aware
 con d° N p n phr n v e
 are free to worship
 V E V' Ø (#)
60. Muslims in Britain are free to worship
 N P N V E V' Ø (#)
61. we have plural societies
 N V' d° e N (#)
62. you know it's nonsense
 con N V N (#)

63. the propaganda is nonsense
d N V N (#)
64. and we're not going to defeat this ideology
c N V' a V' V' d N+
until we in the West go out with sufficient confidence
c N p d N V A+ P+ e N
in our own position
P e+ e+ N (#)
65. and say this is wrong
c Ø V N V E (#)
66. it's not just wrong in its methods
N V a+ a E P d N (#)
67. it's wrong in its ideas
N V E P d N (#)
68. it's wrong in its ideology
N V E P d N (#)
69. it's wrong in every single wretched reactionary thing about it
N V E P e+ e+ e+ e+ N P N (#)
70. and it will be a long struggle I'm afraid
c N V V' d e N PHR (#)
71. but there is no alternative
c N V d N (#)
72. but stay the course with it
c Ø V' d N p N (#)
73. and we will
c N V Ø (#)

(858 words)

Notes

Chapter 1

- ¹ Brazil does not present any biographical data on the speaker. Neither does he present a complete transcription of the 'urban myth' which includes intonation. Nor does he provide a recording. As a result it is not possible to check the accuracy of Brazil's segmentation of the 'urban myth' into meaningful semantic units he dubbed increments.
- ² It is true that while tone units can be reliably identified in a stretch of speech, there are occasions when the exact boundaries of individual tone units are ambiguous. This, however, is not of significance because syllables at the margins of tone units in these instances are not of communicative significance. For instance it is immaterial whether non-prominent syllables after the tonic syllable are notated as being in the tail or in the pre-head of the following tone unit. Brazil (1997: 13) and Greaves (2006: 1004) note that all of the communicatively significant elements in the tone unit are found between the onset and the tonic.
- ³ In an earlier study O'Grady (2006) reinterpreted the conversational corpus published in Crystal and Davy into increments and found that smallest number of complete tone units in an increment was 1, the largest 13 with a mean of 3.1. It seems likely that the reason for the higher mean number of tone units found within increments in Text 1 is because Text 1 alone originated in the written form. The issue of whether or not there is a limit to the number of tone units which can be found within an increment, while of interest, is outside the scope of the present work.
- ⁴ Readers who are nervous about the seeming abandonment of clauses in a descriptive grammar may be reassured to note that numerous scholars such as Chafe (1994), Crystal (1969), Halliday (1967) and Halliday and Greaves (2008) have all noted the close correspondence between tone units and clauses or other grammatical units such as noun groups, adverbial groups etc.
- ⁵ Halliday and Matthiessen (2004), like Halliday's earlier work on intonation (1967, 1970), use the term tone group and not tone unit to describe a stretch of speech which contains one major pitch movement. However, in Halliday's most recent writing on intonation (Halliday and Greaves 2008) he uses the term tone unit and as this is also the term preferred by Brazil I have adopted the term throughout this book.
- ⁶ This claim is neutral as to whether all information units have to be pre-assembled in working memory or whether, as Wray (2002: 263) implies, the content of some

information units may be stored in what she calls the 'heteromorphic distributed lexicon' as a unitary element.

- ⁷ Levelt (1989: 23) argues against the existence of any single unit of talk, including information units. However, his objection that 'different processing components have their own characteristic processing units' does not seem to conflict with the assumption that information units are one of the processing units of increments as are of course elements from the lexicogrammar such as nouns and verbs.
- ⁸ The chunking of the message into tone units, the selection of prominence and tone, etc.
- ⁹ For expository purposes, this discussion of increments is restricted to telling increments. Asking increments are discussed in Chapter 2 Section 2.2.5.
- ¹⁰ For an alternate view see Sinclair and Mauranen (2007) who code their corpus exclusively in terms of M elements which increment the speakers' ideational message and O elements which are used to organize the textual and interpersonal interaction of the discourse. However, unlike this book, Sinclair and Mauranen assumed the pre-theoretical existence of chunks of speech, possibly equivalent to tone units, and were unconcerned with formally notating relations between the chunks.

Chapter 2

- ¹ Unless expressly stated in this chapter all page numbers refer to Brazil (1995).
- ² For a similar view see Bourdieu (1991: 55) who argues, contra Chomsky, that linguistic competence does not consist of the ability to generate an infinite number of sentences but is the ability to generate communicatively appropriate sentences.
- ³ Of course, as speech is not a one hundred per cent secure means of transmitting information, speakers may misjudge the situation and fail to complete their message to their hearers' satisfaction.
- ⁴ With the advent of the computer age there has been an increase in process forms of writing such as computer instant messaging which are not interpreted as a unitary text but rather turn by turn; with each turn serving to help fulfil a communicative purpose.
- ⁵ The symbol # notates an increment ending. An explanation of all transcription conventions is printed on pp. x–xi. While the optional response *oh* is part of the telling exchange it is not part of speaker A's telling increment.
- ⁶ Sinclair and Mauranen (2007: 136) label the intermediate state achieved after production of the initial tone unit 'a completion' and the target state achieved at the end of the utterance 'a finishing'. Completions are points reached which signal potential units of meaning while finishings signal, in the context in which they were uttered, actual achievements of target state. However, as this book is interesting in describing actual rather than potential meaning it does not distinguish between completions and finishings.
- ⁷ Init State, Inter State and Tar State refer to Initial State, Intermediate State and Target State respectively.
- ⁸ Brazil notates suspensive elements in lowercase.

- ⁹ W indicates an *open selector* in Brazil's notation.
- ¹⁰ Perceptive readers will have noted that Brazil's description of the language highlights the dependency relations between the deictic, adjectival and nominal elements, and the prepositional, deictic and nominal elements which form N and A elements respectively. Conversely the coding does not highlight any dependency relation between verbal and non-finite verbal elements. For similar views see Fawcett (2008: 49–50) who argues that because the main verb enters into a 'direct relationship with many aspects of the meanings and forms of the clause' that it is better to consider the main verb to be a separate clausal element: i.e. one that does not form a verbal group with other verbal elements.
- ¹¹ The symbol + represents reduplication.
- ¹² The Ø symbol represents the zero realisation of the predicted N elements *the car* and *the street* in examples (36) and (37) respectively. Brazil (1995: 133) placed the extension found in (36) within brackets and on (p. 134) he bracketed the suspension in (37). However, as he did not employ the bracketing convention for extensions and suspensions in the final and presumably definitive transcription printed on (pp. 215–18) I have not used the bracketing conventions. In the interest of consistency I have coded the elements *pretty quiet* as AE rather than Brazil's original coding of E.
- ¹³ Brazil states that an asking increment is formed out of an initiating increment and a responding increment. He states that the initiating increment obliges a co-operating hearer to produce a response which achieves a target state (pp. 190–1).
- ¹⁴ The ad hoc notation P/R indicates that one or more of the tone units in both examples (58) and (59) has proclaiming tone.
- ¹⁵ Note in the original Brazil et al. (1980) transcription there are seven intervening tone units between paratone 1 and 2. The intervening tone units in Discourse Intonation notation are ↓ // o ↑ FOLD your ARMS // o ↑ LOOK at the WINdow // o ↑ LOOK at the FLOOR // o LOOK at the DOOR // p LOOK at ↓ ME // p ↓ GOOD // p ↑ There are two pitch sequences in the excluded extract, according to Brazil et al. (1980), marked by the low-terminations on *me* and *good*. According to the criteria employed by Tench (1996) the excluded extract is a paratone which is bounded by the initial high pitch on *fold* and by the combination of low pitch on *good* and the immediately following high pitch onset.
- ¹⁶ Note that the description *a tonic syllable pitched significantly lower than the previous syllable* is similar but not identical to low-termination. The syllable which immediately precedes the tonic syllable may or may not be the previous onset.
- ¹⁷ The IPO tradition refers to the approach to describing intonation developed over the past 40 years at the Institute for Perception Research in Eindhoven in the Netherlands. The IPO approach was originally motivated by the desire to create a model of Dutch for use in speech synthesis but has evolved into a more general theory of intonational structure though one grounded in a detailed account of the phonetic realisation of the phonological elements which are perceivable by hearers and, thus, of relevance to them (Ladd 1996: 14).
- ¹⁸ She used the Lancaster IBM spoken English corpus; a collection of prepared and semi-prepared speech. The example referred to here is a read aloud scripted

radio news broadcast which was laid out in orthographic sentences and thus, unlike more spontaneous forms of speech, can be divided into sentences.

¹⁹ See the discussion of example (44a) which shows that because high-termination anticipates a high-key response, the speaker presents his/her information as surprising to the hearer.

²⁰ The part of the tone group prior to the tonic syllable which can contain both stressed and unstressed syllables.

²¹ Esser devotes little space to describing the communicative function of key. He merely notes that high-key is used to mark the beginning of a new topic while low-key 'strengthens the subordinating function'. He makes no claims about mid-key. Key is not involved, he claims, in the 'presentation structure of a text'. (ibid. 80). It is not clear from Esser's transcriptions if his 'nuclear keys' (terminations) represent tonic syllables in extended or minimal tonic segments.

²² In an investigation of the intonation of solicited, i.e. prepared oral narratives, Wennerstrom (2001b) argues that 'pitch maxima' (intonational high points) associate with emotionally prioritized text. She claims that the 'pitch maxima' project the speaker's view of which 'parts of the story are most salient' (ibid. 1187). While her views appear similar to Esser's it is not clear if the pitch maxima identified by Wennerstrom coincide with Esser's 'nuclear key'.

²³ // represents a tone unit boundary. ↑ and ↓ indicate high and low-termination respectively. / and \ indicate rising and falling tone respectively. The diacritic '>' indicates that the content of a tone unit is more important than that of a following tone unit. The . . are used to represent the content of the tone unit.

²⁴ It will be shown on pp. 102–106 that the coding set out in Brazil (1995) is too restrictive as it fails to take account of utterances such as (63) and (64) which in conversation may represent increments whose initial NV elements are left unsaid.

²⁵ Example (67) was re-transcribed into discourse intonation conventions by Cauldwell (1993).

Chapter 3

¹ The term *shared knowledge* is being used informally, here, to refer to knowledge, beliefs and assumptions speakers take for granted that they share with their hearers. Technical definitions of the concept will be introduced and evaluated in Section 2.

² The discussion in Chapter 2 p. 27 showed that increments with subject verb inversion which are not preceded or followed by a projected mental or reporting clause do not appear to have the potential to tell.

³ The term *truth* employed here is not meant to suggest any objective or external truth. Rather it means that if an individual is certain of a fact, that fact is true for that individual. For example if an individual is 100% certain that ghosts exist then the existence of ghosts is true for that particular individual. They can be said to know that ghosts exist even though such knowledge is entirely factually erroneous. In other words truth is always considered to be internal to a situation e.g. Badiou (2001: 67–8).

- ⁴ The dotted line between Shared and Common/Background shows that Shared, while less than 100% certainty, represents a stronger belief/knowledge than Common/Background.
- ⁵ A further objection, that of solipsism, will be discussed on p. 58.
- ⁶ *t* indicates *term*, i.e. lexical items utilized by the speaker and *R* the *referent* the object the speaker intends to refer to. For example, in the example printed in endnote 7 *t* is Ann's use of the definite referring expression *the movie showing at the Roxy tonight* and *R* is *Monkey Business*.
- ⁷ Clark and Marshall (1981: 13) suggest the following scenario. 'On Wednesday morning Ann and Bob read the early edition of the newspaper and discuss that it says that *A Day at the Races* is playing that night at the Roxy. Later Ann sees the late edition, notes that the movie has been corrected to *Monkey Business*, and marks it with her blue pencil. Still later, as Ann watches without Bob knowing it, he picks up the late edition and sees Ann's pencil mark. That afternoon Ann sees Bob and asks, "Have you ever seen the movie showing at the Roxy tonight?" Ann knows that the film is *Monkey Business*. She (speaker) knows that Bob knows that the movie is *Monkey Business*. Furthermore she (speaker) knows that Bob (hearer) knows that she (speaker) knows that the film is *Monkey Business*. Yet Ann is not justified in thinking that Bob will know she is referring to *Monkey Business*. After all he might well reason that that while he knows Ann knows that the film is *Monkey Business* but as he doesn't know she knows that he knows that the film is *Monkey Business*, she is referring to *A Day at the Races*.'
- ⁸ Except of course as an instantiation of neural activity.
- ⁹ Successfully returning a tennis ball like successful communication is not a hundred per cent guaranteed. However, the more skilful and experienced the performer the greater the possibility of success.
- ¹⁰ Austin subdivides the category of locutionary acts into three: the phonetic act – the uttering of certain noises; the phatic act – the uttering of certain words conforming to a certain grammar; and the rhetic act – the performance of the act with a certain sense and reference (1975: 95).
- ¹¹ Grice's article was originally published in *Philosophical Review* 66 (1957).
- ¹² Austin (1975: 151), himself, proposed a loose classification of speech acts into five very general classes: Verdictives – the act of issuing a verdict; Exercitives – the act of exercising power or influence; Commissives – the act of committing to doing something; Behabitives – the act of showing one's attitudes and social behaviour; and Expositives – the act of fitting a response into a discourse, i.e. as marking one's contribution as a reply or an argument, etc.
- ¹³ Searle's inclusion of a propositional content rule shows that, unlike Austin, his category of illocutions contains and subsumes locutions.
- ¹⁴ He claims, to my mind unconvincingly, that pragmatics needs to concern itself solely with theorizing about publicly available instances of language behaviour (ibid. 34).
- ¹⁵ Gunter follows the transcription system devised by Trager and Smith (1951). This system has four pitch levels; 4 is the highest and 1 the lowest. A 3 . . . 1↓ is a neutral fall. A 1 . . . 1↑ is a low rise.
- ¹⁶ To ensure the presence of one example from each of Searle's categories – excluding declarations – I have changed Couper-Kuhlen's example 'I welcome you to our city' to 'I invite you to our city'.

- ¹⁷ Chun (2002: 61) interprets Sag and Liberman's notation in a different way. She argues that it is key and not tone which distinguishes a literal question from a suggestion: high key realizes a literal question while low key realizes a suggestion. Nonetheless, the point that this is not a generally applicable rule remains. Examples (13) and (14), regardless of key, are unlikely to be interpreted as genuine enquires!
- ¹⁸ Their findings have not, as of yet, been replicated for other dialects of English.
- ¹⁹ See Ladd (1996: 82) for a list of correspondences between Pierrehumbert's notation and that of the 'British style nuclear tones'.
- ²⁰ As discussed previously, mutual assumptions do not appear to be psychologically feasible or necessary for the description of how speakers estimate the extent of shared speaker/hearer convergence.
- ²¹ Another scholar who concurs that the fall-rise labels information as part of the background while the fall labels information as updating the background is Steedman (1991, 2000: 656) who argues that the 'theme' of an utterance (information already shared by the speaker and the hearer) is either de-accented or receives a fall-rise contour while the 'rheme' (information not previously shared by the speaker and the hearer) receives a falling contour.
- ²² In his most recent work, Gussenhoven labels the communicative value realized by rising tone as *testing* and claims that 'testing leaves it up to the listener to decide whether the message is to be understood as belonging to the background' (2004: 299).
- ²³ Brazil proposes an identical relationship between the fall (p) tone and rise-fall (p+) tone. Both tones proclaim but only p+ realizes the extra communicative value of dominance. Gussenhoven (1983) does not include rise-fall tone among his three primary tones. However, he speaks of nine secondary tones which are produced by the application of a number of phonetically specifiable modifications which are also assigned morphemic status (ibid. 193). One of the four phonetic modifications is timing realized as delay (ibid. 216). Gussenhoven states that a delayed fall is a rise-fall (1983: 217 his example 28a). The modification delay adds the extra communicative value that the manipulation (in this case V-addition) of the variable is very significant or non-routine (see also O'Connor and Arnold 1973: 78–82 and Cruttenden 2001: 269). As rise-falls are rare in discourse, I will discuss dominance only in respect to rising tones.
- ²⁴ A discussion of planning difficulties in assembling speech on the fly is deferred until Chapter 4 pp. 106–110.
- ²⁵ An alternate explanation for the preponderance of level tones found in public scripted prayer may be that it is difficult to speak in unison if speakers employ a tone other than level tone (Martin Hewings, personal communication). However, such an explanation does not explain Crystal's finding that the level tone is also the most frequent tone found in individual liturgical prayer.
- ²⁶ Neither Ladd nor Gussenhoven recognize the existence of an independent level tone. They argue that what is realized phonetically as level tone is phonologically either a stylized rise or a stylized fall. Gunter (1982) criticizes the labelling of a surface level tone as a realization of an underlying tone as an artefact arising out of Ladd's theory.

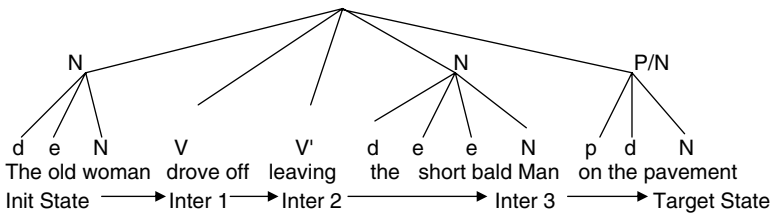
- ²⁷ He claims that instantiations of ritual insults and name calling are likely to be realized by a stylized rise.
- ²⁸ In this example I have not coded the element *two* because Brazil (1995) does not provide a coding for numerals. There will be a discussion on how to code numerals in Chapter 5.
- ²⁹ To illustrate what they mean by entailment they provide the example (ibid. 84) 'Apples grow in orchards and grapes grow in vineyards. [entails that] Apples grow in orchards'.
- ³⁰ The first edition of Sperber and Wilson was published in (1986) and it was this edition which Bolinger commented on.
- ³¹ See Halliday (1978) for a discussion of *field* (the nature of the social action which the communicators are engaged in), *tenor* (the relative statuses and role relationships, both permanent and transitory, existing between the interlocutors) and *mode* (the part language plays including the textual organization of the discourse, the channel used to communicate and what is being achieved by the text in communicating the message).
- ³² The term *lexical item* is employed here as a non-technical term to refer to what people instinctively recognize as words. The issue of whether a lexical item can encompass more than one orthographic word will be examined in Chapter 4.
- ³³ Eco employs an Italian comedy routine from the 1950s to make his point. A vain-glorious braggart enters a train compartment and greets the other passengers loudly before sitting down. After a while one of the other passengers stands up and reaches up to the luggage rack. He withdraws his hand suddenly as if he has been bitten and then implores his fellow passengers not to make noise as this will disturb his *sarkiapone* which is sleeping in his bag. The newcomer, despite having no idea what a *sarkiapone* is, does not want the other passengers to discover his ignorance and so he starts to chat about *sarkiaponess* as if he has been dealing with them for years. Through a series of heuristic contributions he attempts to distinguish the *sarkiapone* in the luggage rack from *Asian sarkiaponess* which he claims to be familiar with.
- ³⁴ A possible, though to my mind unconvincing, fix to this problem would be to argue that the lexical item *girl* refers to more than one class of females of which the prototypical member of the class is +HUMAN – ADULT, and that it is the co-text which licenses the intended semantic reference (Cruse 1986: 151).
- ³⁵ Cruse and Lakoff employ the term *basic level* instead of core lexical item.
- ³⁶ It may be of interest that Cruse (1986: 146) states that core lexical items are typically morphologically simple while superordinates and subordinates are not.
- ³⁷ The term 'context' is severely impoverished in the psycholinguistic literature [as it is in much of the work deriving from Cognitive Linguistics e.g. Cruse (1986) and Lakoff (1987)] and refers solely to sentential context. In this book the term *context* found within inverted commas ('context') indicates that the term refers solely to sentential context.
- ³⁹ Halliday (1994) proposes three language metafunctions: (1) *Ideational* – language functioning as a means of conveying and experiencing the world; *Interpersonal* – language functioning as an expression of the speaker's attitudes

and as an influence on the hearer's attitudes; and *Textual* – language functioning as a means of constructing a text.

Chapter 4

¹ The discussion of the grammar in Chapter 3 showed that while it is couched in terms of prospections between elements, not all elements have the same status. For instance N elements and P/N elements are themselves formed out of suspensive elements which prospect further N elements. Thus, for readers used to phrase trees the increment *The old woman drove off leaving the short bald man on the pavement* can be notated as:

² The diacritic * indicates that the sentence is ungrammatical.



³ Lear's rhyme: *There was an Old Derry down Derry; who loved to see little folks merry, so he made them a book, and with laughter they shook at the fun of that Derry down Derry* is presumably not judged grammatical on formal criteria alone but rather is judged acceptable [and innovative] because it fulfils a communicative act.

⁴ A grammar where each word in real time creates an expectancy that only certain ways forward are possible.

⁵ Sentences whose first words lead the listener up the garden path to an incorrect analysis.

⁶ Assuming we are investigating the pattern of the *to be* verb.

⁷ 'She *saw him*' demonstrates the pattern V..n, and 'she *saw him leave*' demonstrates the pattern V.. n ..v.

⁸ By coding the entire suspensive subchain in lower case we have highlighted the fact that the entire subchain suspends the production of the following V element but obscured the fact that within the subchain some elements formally suspend other elements within the subchain.

⁹ Brazil (1995) does not overtly state that the orthographic word is the unit of selection. However, in his sample analysis (p. 215–18) he somewhat inconsistently codes *multi-storey* and *handbag* as single lexical E and N elements respectively, but codes *car park*, *back seat* and *driveway* as reduplicative N+N elements.

¹⁰ The coding PHR-V is adopted from the *Cobuild Advanced Learner's dictionary* (2003) which classifies *is raining cats and dogs* as a Phrase: verb. The coding PHR is used throughout this book to signal a single lexical item which itself consists of more than one orthographic word. *Cobuild* is used in this book as shorthand to refer to the 2003 edition of the dictionary.

- ¹¹ According to Brazil (1997) // the QUEEN of hearts // indicates that *hearts* is projected as recoverable from the previous context. Here the lexical element *queen* realizes an independent selection.
- ¹² The process by which, in the history of a language, a unit with lexical meaning changes into one with grammatical meaning (Matthews 1997: 151).
- ¹³ Caution is needed when considering the Spoonerisms (32) and (33). Potter (1980: 30) conjectures that Spooner's individual style of speech may have been due to a cerebral dysfunction. He further speculates that Spooner's condition may not in fact have been unique. It was simply Dr Spooner's exposed academic position which highlighted his condition. Anderson (1990: 337), on the other hand, suggests that Spooner's style of speech may have been due to deliberate attempts at humour by Dr Spooner himself.
- ¹⁴ The intended words are given in italics immediately after the word containing the slip of the tongue.
- ¹⁵ Table 4.1 is an adaptation of Table 8-1 in Carroll (1994: 192) which included all eight types of speech errors. The remaining four classes *Addition*, *Deletion*, *Substitution*, and *Blends* occur internally within orthographic words, and so cannot shed any light on the issue of the extent of single lexical elements, and so are excluded here.
- ¹⁶ Or perhaps the whole phrase *getting your nose remodelled* is treated as a single meaningful unit.
- ¹⁷ This claim is neutral as to whether the chunk is stored at a single address in the mental lexicon or assembled by speakers into a meaningful chunk prior to its articulation as a single meaningful chunk.
- ¹⁸ To ensure methodological consistency such instances will only be recorded if they are so notated in Cobuild which has been chosen as the arbitrator of whether or not word-like elements coalesce into larger elements because it is based upon extensive corpus research.
- ¹⁹ The elements contained within the angled brackets were ellipted.
- ²⁰ Brazil (1995: xvi) states that the diacritic ɴ is used to code *and* and *so*. However, on page (216) he somewhat oddly codes *but* with ɴ. Section 4.5 p. 111 discusses how to code linking elements such as *but*.
- ²¹ Brazil (1995: 216) coded *just happens* as a V element in (37) though a more accurate coding would appear to be to code *just* as a suspensive adverbial element. He codes *and so* as a single element in (38).
- ²² An alternative and intuitively satisfying definition of ellipsis is that it is the covert realization of a word or words (Hudson 2006: 178) which entails that all ellipted elements are ordinary words. This raises the possibility that a more delicate grammar coding could easily devise a coding where the part of speech of the ellipted element is included in the description.
- ²³ The situational ellipsis of the lexical element *I* appears to mandate the ellipsis of *have* as the utterance *have got a cold* appears unlikely possibly because it seems to carry unwarranted and inappropriate interrogative implications.
- ²⁴ In the interests of simplicity and because of their irrelevance to the present discussion; key and termination selections have not been transcribed. The grammar coding was not present in Brazil (1997).
- ²⁵ This example presupposes that the pause is not a deliberate strategy aimed at manipulating the hearers' expectations.

- ²⁶ While utterance-final pauses do not disrupt the operation of the chaining rules they appear to be of communicative significance in that they are useful for maintaining orderly turn taking (Biber et al. 1999: 1054) though see Cutler and Pearson (1986: 146) for a contrary opinion.
- ²⁷ All line numbers refer to those in the transcription in Brazil (1995: 215–18).

Chapter 5

- ¹ Both of Blair's verbal performances are available on You Tube. Text 1 is available at <http://www.youtube.com/watch?v=yhU4F6lhLLo> and Text 2 is available immediately after President Bush's answer starting at 0.26 seconds. <http://www.youtube.com/watch?v=MVkcCjWAlcY>

Text 1 was published by on the official UK government website for citizens and is available at http://www.direct.gov.uk/en/N11/Newsroom/DG_10020708 Last accessed July 31, 2009.

- ² The New Zealander was born in Lancashire but immigrated to New Zealand as a young child where she grew up and spent most of her adult life.
- ³ Dmc and Rf are the New Zealand and Canadian readers respectively.
- ⁴ The maximum and minimum standard scores are as follows:

In Text 1 variation in length of tone units is maximum = 1.309, minimum = -1.993 which gives a spread of 3.302; variation in extent of increments is maximum = 1.556, minimum = -1.297 which gives a spread of 2.853; and in Text 2 the variation in length of tone units is 1.623, minimum = -1.466 which gives a spread of 3.09; variation in extent of increments is maximum = 1.682, minimum = -1.893 which gives a spread of 3.575. Our expectation that the more scripted nature of Text 1 would result in less variation in the number of increments is met; especially when we consider that the variation exists only among a subset of five readers.

It seems possible that the readers' freedom to segment the same stretch of speech into information units and then chunking the information units into increments is constrained by the text itself and by cognitive constraints!

- ⁵ It is to be remembered that there is an inverse relation between the standard scores and the extent of tone units and the length of increments. In order words standard scores above zero indicate tone units containing fewer lexical elements, and increments containing fewer tone units.
- ⁶ The software is available for free from http://www.fon.hum.uva.nl/praat/download_win.html
- ⁷ The numbers of tone selections were converted into standard z scores with the following ranges. For Text 1: falls from 1.318 to -1.511 which is a range of 2.829, rises from 1.95 to -1.178 which is a range of 3.128, levels from 2.038 to -0.912 which is a range of 2.95, fall-rises from 1.343 to -2.511 which is a range of 3.854 and rise-falls from 1.407 to -1.910 which is a range of 3.317.

The figures for Text 2 are as follows: falls from 2.022 to -1.26 which is a range of 3.282, rises from 1.69 to -1.548 which is a range of 3.238, levels from 2.601 to -0.776 which is a range of 3.377, fall-rises from 1.504 to -1.665 which is a range of 3.169 and rise-falls from 2.182 to -1.018 which is a range of 3.199.

This indicates that despite the fact that Text 1 is a more prepared text than Text 2 the readers, in pursuit of their own individual communicative purposes were free to select the tones that best projected their individual construal of both texts.

- ⁸ Increments in the corpus are identified as follows: T1 or T2 refers to either Text 1 or 2, the following initials refer to the reader and the number refers to number of the increment within the text. Thus, [T2-Bc-12] refers to increment 12 in Text 2 of Bc's reading. The entire corpus is available from the author.
- ⁹ Dc misread the word *in* and produced *is*.
- ¹⁰ Or 5 elements read 11 times minus a misreading by Dc!
- ¹¹ As the reminder of this chapter focuses on how lexical elements were coded it is not necessary to refer to actual readings of Texts 1 and 2.
- ¹² The other verbs in phase coded as VPHR are he used to \↑spend //, they're not giving the entertainment they /used to give //, well the \grounds // are scruffier than they /used to be, //, we don't seem to have very much \↑wood //, used to be about twenty feet \↑high //, when i used to \teach //, and my \hair seems to need washing, // and er then we used to go -out //
- ¹³ The communicatively significant residue of the increment is at the very least similar to Sinclair and Mauranen's (2006) linear unit of meaningful text (LUM).

Chapter 6

- ¹ An utterance is defined here as a stretch of speech which is followed by a change of speaker – including a non-verbal backchannel such as m if there is an audible pause.
- ² In the Crystal and Davy (1975) corpus 67% of speaker utterance endings coincided with the completion of increments.
- ³ The term adverbial is used loosely to refer to all circumstantial elements, in other words it refers to all elements which are not participants in the verbal process.
- ⁴ None of the 11 readers produced example (7). Of the seven readers who construed the chain of elements in (7) as an increment, six chose a tonality division which resulted in the placement of the adverbial in its own tone group. In two cases the tone unit contained a rise, in three cases a fall rise and in the remaining case a fall.
- ⁵ I have interpreted worship as a transitive verb rather than as the intransitive verb which can be paraphrased as *to take part in a religious ceremony*.
- ⁶ Presumably the element *secular dictators* is intended to refer to Saddam Hussein. However, O'Halloran (2003: 163 en4) warns that as analysts approach texts with motivations and interests remote from those of ordinary readers there is a danger that analysts will over-interpret a text. In other words, by focusing on the potential meaning of a text the analyst may miss the actual meaning that a consumer who approaches the text non-critically may have gleaned. In other words, there can be no presumption that a non-critical hearer will make a connection between Islamic extremism and secular dictators such as Saddam Hussein.
- ⁷ This number is less than 26 because on a number of occasions more than one reader read the same stretch of speech in a similar manner.

- ⁸ This amounts to 0.32 per cent of the increments in the corpus and it may well be that as descriptive statements in linguistics are best regarded as having more or less validity rather than as markers of absolute truths (Halliday 1967: 9) that the grammar does not need to concern itself with such marginal examples.
- ⁹ The description of examples (14a) and (14b) is simplified slightly as it ignores tonicity differences – see Halliday (1967), Halliday and Greaves (2008) or Tench (1996) for detailed descriptions of the system of tonicity.
- ¹⁰ It is worth noting that had Bs produced a falling tone in place of the first level tone in example (18) he would have produced two increments. Five of the readers produced a fall and segmented the stretch of speech transcribed in (18) into two increments. The remaining five readers Emi, Jt, Mh, Rf and Sn chose a fall-rise preceded by a fall. Bs's possible recognition that a potential target state could simultaneously realize an implication may have lead to his confusion.
- ¹¹ Example (20) because of the presence of the tone unit internal pauses is arguably also an illustration of level tone signalling disengagement. However, the first two tone units at least do not strike this hearer as disengagement!
- ¹² Had Mh chosen a falling tone and not a level tone he would have produced two increments.
- ¹³ It is perhaps of note that Blair himself chose a level tone indicating that he projected a context where it was self evident that he was about to produce a *short statement*.
- ¹⁴ Though the fact that the orthographic text she read aloud was written, *it is really tough* and not, *it really is tough* may provide a clue to her choice of level tone.

Chapter 7

- ¹ The number of instances of key in Table 7.1 excludes 45 instances of high key in minimal increments i.e. those that contained only one tone unit. In increment [T2-Bc-13] // you can s . . . you ↑KNOW you can see it in \PAlestine // the high key on *know* has been classified as being an increment initial key even though it is contained in a tone unit which is itself simultaneously increment initial and increment final. Texts 1 and 2 contained 8 and 37 high key in minimal increments respectively.
- ² These figures do not include high key/terminations which are discussed in section 7.2. Hence the figures given above represent an undercount.
- ³ These figures exclude 32 instances of low key/termination in Text 1 and 50 instances in Text 2.
- ⁴ It is also possible, as the discussion of examples (11) and (12) indicate, that the high key on *particularly* may also be an instance of a particularizing key. It may represent an internal evaluation of the narrative (see Labov 1972b). Wennerstrom (2001b: 1187–9) describes evaluations such as example (1) as *internal*, 'they occur within the actual story clauses' (ibid. 1195). She argues that internal evaluations are identified by high initial pitch and the presence of 'loaded' lexical items such as adverbs of intensification, e.g. *particularly*. Wennerstrom measures pitch in terms of absolute F0 values and so her pitch maxima are not identical with high

key. Hence example (1) may be an instance of the simultaneous selection of high key for phonological reasons and the non-discoursal use of intonation which may ‘ride[.] on top of the phonological structure’ (ibid. 1186) and indicate the speaker’s attitude towards his narrative.

- ⁵ Tr was the sole reader to select high key, thus, none of the other readings signalled an explication of the contrast between what happened before and after September 11th and generated the implication which Tr’s reading did. Tony Blair’s production of the text was in accord with Tr’s in that he too selected high key and signalled that the content of the increment was contrary to the previously generated discourse expectations.
- ⁶ An alternate though not necessarily opposing analysis of the high key on *try* is that it is a particularizing key. The reader states that *try* is the only word which can be used to describe his action. In other words he is attempting to describe rather than describing. Five of the other ten readers selected high key on *try*.
- ⁷ Tony Blair in his original production of the text selected an increment initial high key on *reasonably*.
- ⁸ A number of the medial high keys could have been counted as increment initial high keys. In T2-Bs-18 and especially in T2-Dc-47 the initial tone unit could have been notated as a discourse marker/filled pause marker and excluded from increment structure. However, in the interests of completeness a pre-theoretical decision was made to include everything that could be included within increment structure. As a result the elements in the initial tone were notated as suspensive elements and the high keys were classified as medial.

- / \uparrow NOW // \uparrow WHAT is its \downarrow PURpose // [T2-Bs-18]
- -ERM // in the SENSE that you are looking . . . at \uparrow WHAT is HAPpening in the \downarrow MIDdle east // and what is happening in \uparrow RAQ // and /LEBanon // and \downarrow Alaestine // [T2-Dc-47]

- ⁹ The other ten readers all projected Sn’s potential minimal increment as an increment.
- ¹⁰ The pattern of a particularizing key being preceded by another high key within the increment was relatively common. Fifteen medial particularizing keys were found in increments which contained an earlier high key which either projected that the content of the increment or of more than one tone unit within the increment was contrary to the previously generated discourse expectations. In addition there were three particularizing keys which followed a high key/termination (see Section 7.3.1).
- ¹¹ Brazil (1997) described key as only occurring on the onset syllable and did not discuss the pitch level of intervening prominent syllables in the tonic segment prior to the tonic syllable. He (ibid. 14) recognized that on occasions tone units will occur with more than two prominent syllables. However, he argued (ibid. 146) that the presence of extra prominent syllables indicated speaker disengagement from the context and that the speaker was automatically assigning prominence to all open-class lexical items. Numerous other scholars such as Crystal and Davy (1975), Halliday (1970: 131–2) and Tench (1990: 489–93) in their transcriptions

of spontaneous dialogues regularly transcribe tone units with more than two accented syllables. Crystal and Davy, like this book, record prominent syllables other than the onset and tonic which are stepped up in pitch. Even if one accepts that Brazil's notion of prominence is somehow different from the notion of accenting Brazil's argument does not appear to describe what is occurring in the corpus. In three of the four cases the speaker chose to make prominent a closed-class lexical item and pitch it significantly higher than the previous onset syllable.

- // REALize that ↑OUR determ\N\A\Tion // [T1-Bs-19]
- // Even in our ↑OWN MUslim co\MUNities // [T2-Bc-57]
- // to USE ↑ANY means at \↑ALL // [T2-Tr-45]

The selection of prominence on items such as *our*, *own* and *any* does not seem to be an automatic process. It appears that by making these items prominent the readers are projecting contexts where *our*, *own* and *any* realize existential selections from closed lexical paradigmatic sets. The co-selection of a high pitch level particularizes these selections. For example, Bs projects a binary opposition where *our* opposes all other relevant lexical senses such as *his*, *her*, *my*, *your* and *their* and instantiates the meaning *our* and not anybody else's.

- ¹² There were 125 examples of high key/termination in the corpus which have not been included in this figure.
- ¹³ The example was originally taken from Crystal and Davy (1975: 36) with the grammar coding added by O'Grady.
- ¹⁴ The hearer is of course very unlikely to find the news that *Muslims are free to worship in America* to be either new information or surprising. For the purposes of his own rhetorical purposes and effect Bs has manipulated the context by projecting that the information is both newsworthy and likely to be surprising.
- ¹⁵ High termination is described by Brazil (1997) as anticipating adjudication or more loosely here as seeking an active hearer intervention. In the data studied here active hearer intervention was precluded. The only apparent method of investigating whether a high termination value is present appears to be to ask the speakers whether their use of high pitch on a tonic syllable was in fact intended to invite an active hearer intervention. Accordingly the high termination value is assumed to be the default.
- ¹⁶ In Text 1 there were also 22 (56.4 per cent) increment final low key/terminations which were immediately followed by a high key and one (2.6 per cent) low key/termination immediately followed by a high key/termination. In Text 2 there were 15 (25 per cent) low key/terminations immediately followed by a high key and 5 (8.3 per cent) low key/terminations followed by a high key/termination. The communicative value of low key/termination is discussed in Section 7.3.1.
- ¹⁷ Falling tone is, as previously discussed, a necessary but not sufficient condition in indentifying increments. For a stretch of speech to form an increment it must also satisfy the grammatical chaining rules and in the context in which it was produced realize an act of telling.

Chapter 8

- ¹ Coulthard (1985: 134) discusses the difficulty in describing extended speech such as a two-minute teacher monologue in terms of exchanges.
- ² It should be noted that Halliday's concept of 'learning to mean' derived from the field of first and not second language acquisition.
- ³ Ellis (1994: 643–5) provides a useful summary of how consciousness-raising exercises can be a valuable classroom practice in helping learners develop explicit knowledge of grammatical structures prior to being asked to produce the structures. Similarly, before being asked to produce contextually appropriate chains, learners could be explicitly instructed in how to realize chains which obey chaining rules.

Appendix 3

Text 1

- ¹ The (#) diacritic indicates throughout a possible and not an actual increment ending.
- ² The coding W refers to what Brazil labels an *open selector*: an item which serves the purpose of indicating that the making of a particular selection is relevant to the achievement of target state but that the item itself does not make the selection which is in fact made later (Brazil 1995: 251). Examples in the corpus are *that* (when functioning as a relative pronoun), *what*, *which*, *why*, *how*, *because* and *who*.
- ³ The elements *try and tell you etc.* have been coded in a manner analogous to *try to tell you* as an expansion. An alternate coding would be *try and tell you*

$$V \quad c \quad \emptyset \quad V' \quad N$$
with the \emptyset diacritic indicating elided nominal and verbal elements
- ⁴ Had ellipsis not been coded increments 8, 9, 10 and 11 would all have been coded as being part of the same increment.
- ⁵ Strict application of the chaining rules would lead to the coding of the A element *later* as suspensive but this seems counterintuitive as the A element does not seem to be out of place. Consider *I will return later* where *later* does not suspend.
- ⁶ The \emptyset coding notates an elided NV projecting clause.
- ⁷ The subchain *those engaged in terrorism* is suspensive.
- ⁸ The initial elements of increment 9 are missing. Ellipsis has not been coded as it seems as if the increment commences in mid thought. An alternative analysis would be to attempt to reconstruct semantically what is unsaid and code the ellipsis. Had this procedure been followed the elided elements would appear to realise a semantic value approximate to *the problem/fact/matter etc.*
- ⁹ An alternate analysis would have been to code *I mean* as N V elements. Had this been done increment 10 would have formed two increments:

I mean in Algeria for example (#) tens and tens . . .
 N V P N PHR (#) num c num . . .

- ¹⁰ An alternate analysis is to code increment 14 as an extension within increment 13.
- ¹¹ The convention *you know* could have been coded as the first element in increment 18. In speech the position of the pause is used to determine whether conventions are increment initial or final. See also *you know* in increments 58, 60 and 62, and the adverbial element *now* in increments 19, 27 and 45.
- ¹² The suspensive subchain interrupts the prospection of the N element *the act of terror*. The brackets around (*it's*) indicate that the repetition of the NV elements does not advance the increment towards target state.
- ¹³ The . . . dots indicate the abandonment of an increment: in other words in increment 28 production of the N element represents the first advance towards target state. An alternate analysis would be
- Now what happened after September the 11th* is coded as an increment as follows:
 a W V p N Ø # = semantically *Something happened after September*. In speech intonation and pausing would be used to choose the correct analysis.
- ¹⁴ Increment 30 is abandoned but then picked up once more by the speaker after the completion of increment 31. See also increment 33.

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